ANNUAL REPORT

OF THE

HEALTH DEPARTMENT

OF

THE CITY OF BALTIMORE, MD.

1903

Baltimore. Health Dept.

ANNUAL REPORT

—OF THE—

SUB-DEPARTMENT OF HEALTH,

DEPARTMENT OF PUBLIC SAFETY,

—TO THE—

MAYOR AND CITY COUNCIL OF BALTIMORE,

—FOR THE—

Fiscal Year Ended December 31, 1903.

BALTIMORE, MD.
WM. J. C. DULANY COMPANY,
CITY PRINTERS.

1904

Officers and Employes of the Department of Public Safety,

SUB-DEPARTMENT OF HEALTH.

JAMES BOSLEY, M.D., - - - - - Commissioner of Health
C. HAMPSON JONES, M.D., - - - - Asst. Commissioner of Health
SYDNEY O. HEISKELL, M.D., - Asst. Com'r of Health (Quarantine)
THADDEUS W. CLARKE, M.D., - - Asst. Quarantine Physician
J. W. M. KIGER, - - - - - Secretary Department of Health
ARTHUR D. THOMPSON, - - Asst. Secretary Department of Health
WILLIAM ROYAL STOKES, M.D., - - - - - - Bacteriologist
GUSTAV W. LEHMANN, PH.D., - - - - - - - - Chemist
NICHOLAS G. KIERLE, M.D., - - - - - Medical Examiner
B. P. MUSE, M.D., - - - - - - - Asst. Medical Examiner
JOSEPH C. MITCHELL, - - Inspector of Plumbing and Drainage
C. I. PUTTS, JR., G. R. MINNICK, C. H. INDERRIEDEN, JOHN WARD,
Asst. Inspectors of Plumbing and Drainage
FRANCIS A. EBBERTS, - - - - - - Inspector of Drains
FRANCIS X. JENKINS, - - - - - - - - Nuisance Clerk
HARRY C. ANDREWS, - - - - - - - - Permit Clerk
JOHN H. UHLENBERG, - - - - - - - Registrar's Clerk
CHAS. A. WALL, GEORGE C. WEDDERBURN, - - - Index Clerks
W. F. STUBBS, M.D., - - - - - - Inspector of Throats
GEORGE F. SCHULTZ, - - - - - - - Inspector of Dairies
W. B. ROTH, C. A. LERIAN, CHAS. KNELL, H. G. WILSON
and E. C. COOPER, - - - - - - - - Inspectors of Food
R. L. WEBER, - - - - - - - - - Inspector of Bakeries
J. A. CAMPBELL, - - - - - - - - - Laboratory Clerk
ELEAZER GOLDBERG, - - - - - - Commissioner's Clerk
PATRICK R. GLYNN, - - - - - - - - Keeper of Morgue
WM. E. WOODALL, - - - - - - Maker of Disinfectants
THOMAS E. MORSE and GEORGE W. PHILLIPS, - - Disinfectors
E. F. KELLY and AUGUST RITTMILLER, - Drivers of Funeral Wagon
JOHN B. WEILAGE, JOHN JOHNS, GROVER BENSER
and GEORGE KARL, - - - - - - - Laboratory Assistants
JAMES BATCHEN, - - - - - - - - Telephone Operator

List of Health Wardens.

Wds.	Names.	Addresses.	Office Hours. A.M.	P.M.
1.	Dr. J. W. Williams....	1114 Chesapeake Street.....	.....	6-8
		410 S. Patterson Park Ave.....	8-10	7-8
2.	Dr. C. M. Schutte.....	600 S. Wolfe Street.....	8-10	7-8
3.	Dr. J. A. Schutte.....	1400 Gough Street.....	8-10	7-8
4.	Dr. H. K. Gorsuch.....	207 N. Liberty Street.....	8-10	7-8
5.	Dr. J. E. Heard	202 Aisquith Street.....	8-10	7-8
6.	Dr. J. T. Spicknall...	14 N. Patterson Park Avenue	8-10	7-8
7.	Dr. A. S. Gage.....	1716 E. Madison Street	8-10	7-8
8.	Dr. J. W. France.....	1407 N. Gay Street.....	8-10	7-8
9.	Dr. C. T. Buckner.....	1337 E. North Avenue.....	8-10	7-8
10.	Dr. E. H. Hayward...	1003 E. Eager Street.....	8-10	7-8
11.	Dr. C. VanBibber.....	9 E. Read Street.....	8-10	7-8
12.	Dr. T. L. Richardson.	211 W. Twenty-fifth Street.....	8- 9	6-8
13.	Dr. D. S. Williams.....	254 Carroll Street (Woodberry)....	7- 9	5-7
14.	Dr. A. G. Barrett.....	1631 Madison Avenue.....	8-10	7-8
15.	Dr. J. L. Ridgely.....	Forest Park	8-10	7-8
16.	Dr. Geo. B. Scholl....	1005 W. Lanvale Street.....	7- 9	6-8
17.	Dr. G. W. Hemmeter.	1114 Myrtle Avenue.....	7- 9	6-8
18.	Dr. R. A. Warner.....	873 W. Lombard Street.....	8-10	6-8
19.	Dr. M. G. Smith.....	1628 W. Lexington Street.....	8-10	6-8
20.	Dr. H. J. Hahn.....	Irvington	8-10	6-8
21.	Dr. A. D. Driscoll.....	757 McHenry Street.....	8-10	6-8
22.	Dr. A. T. Chambers...	614 S. Paca Street.....	8-10	6-8
23.	Dr. C.P.Erkenbrack..	1412 Light Street.....	8-10	6-8
24.	Dr. L. J. Turlington..	120 Fort Avenue.....	8-10	6-8

REPORT

—OF THE—

Commissioner of Health.

REPORT

BALTIMORE, MD., January 1, 1904.

To the Honorable the Mayor
and City Council of Baltimore.

GENTLEMEN: In accordance with the requirements of law I have the honor to submit the report of the Sub-Department of Health, Department of Public Safety, for the year ended December 31, 1903: The death rate for the whole population, white and colored, was 18.30 per thousand, compared with 19.53 for 1902. The deaths included 4,027 white males, 5,632 white females, 1,214 colored males, and 1,268 colored females, a total of 10,141. The death rate per thousand of the white population was 16.27, and of the colored population 29.45, an increase of 0.95 per thousand in the former, and a decrease of 2.05 per thousand in the latter.

The births reported were: White males, 3,613; white females, 3,388; colored males, 815; colored females, 804; total of white and colored, 8,620. Still-births, 741. The birth rate per thousand of population was: White, 15.52; colored, 19.74; for the entire population, 16.17. It will be seen that while the death rate among the colored population was greater than that of the white population, at the same time the birth rate of the former was considerably greater than that of the latter. Unfortunately, the returns of birth are incomplete, it being estimated that not more than 65 per cent. of the births are reported to the department, and it is, therefore, impossible to make any comparisons between the birth rate of the white population and that of the colored population. From the evidence at hand, however, it is apparent that the fecundity of the colored race in Baltimore is greater than that of the white race.

The deaths in hospitals and other institutions numbered 1,688, compared with 1,885 in 1902; 1,056 coroners' inquests, and 88 autopsies were held. The marriages reported were 5,593, an increase of 458 over 1902.

The principal causes of death were tuberculosis, with a total of 1,186; pneumonia, 1,101; diseases of the heart, 757; Bright's disease, 693; diarrhoea and enteritis, under 5 years of age, 550; cancer, 370; bronchitis, 235; typhoid fever, 189; diphtheria and croup, 160; scarlet fever, 84, and measles, 77. The total mortality of children under 5 years of age was 3,102.

SMALL-POX.

It is gratifying to note that, while this sub-department had every reason to believe that our city would have a mild invasion of small-pox during the year, only forty-one cases were reported, and there were but two deaths from the disease. This we regard as remarkable, when we consider that nearly every State and Territory had more or less cases of the disease, and that several cities and large towns easy of access to Baltimore suffered from the disease in almost an epidemic form. The comparative immunity from the disease that has obtained in Baltimore we believe to be largely due to the extensive vaccination of our people. Fortunately, the department has been supported by an ordinance of the Mayor and City Council, adopted after the epidemic of 1882–83, giving the Commissioner of Health extraordinary powers in times of imminent danger from the disease. This ordinance requires the vaccination of all children at least once before they are one year old, and as often thereafter as the Commissioner of Health shall, in his judgment, deem necessary.

The wisdom of this legislation, we believe, has been clearly demonstrated by our experience of the past three years. The recurrence of epidemics of small-pox seems to run in cycles, and the history of the past led us to believe that an epidemic of the disease might reasonably be expected to occur in the winter of 1902–'03. As the guardian of the

public health, it was the sworn duty of the Commissioner of Health to take such necessary precautions as, in his opinion, would render the city immune from the disease in an epidemic form. The only means to this end was the successful vaccination and revaccination of all persons who were likely to come in contact with the disease. For this purpose the Board of Estimates set aside in 1903 the sum of $7,500 for the use of the Health Department in vaccinating and isolating persons suffering from the disease, and all persons who might come in immediate contact with the disease. In addition an appropriation was made for a detention barracks at Quarantine, which has just been completed. As soon as the money was provided an extra force of vaccine physicians was employed, who made a systematic canvass of the city and vaccinated many thousands of persons, who otherwise would not have been vaccinated. These were in addition to the large number who were vaccinated by the regular staff of Health Wardens. The work was continued throughout the year by the regular staff of physicians attached to the Department.

While Baltimore has had but few cases of small-pox in the past three years, a different condition has obtained in several other cities. This difference we believe to be due solely to the absence of systematic vaccination. While Baltimore has a compulsory vaccination law, some other cities have no such law, and it is a fact that where vaccination is not compulsory the largest percentage of cases of the disease are found. While the cost of preventing an epidemic has been large, when we consider that amount of the appropriations made annually for the expenses of the Health Department, it is not worthy of consideration when we think of what would be the cost to eradicate an epidemic of the disease. The discovery of a case of small-pox means the isolation during the period of incubation, two weeks, of several members of the same household. These people, as a rule, are wage earners and unless they are permitted to go about their daily avocations

their maintenance must necessarily be provided by the city. In most cases new clothing must be supplied to patients who have recovered, and guards have to be paid to prevent people going into and out of infected houses. All this costs money and in a time of epidemic the cost would run into a large sum. The principal cost of an epidemic, however, would fall upon our business community. People from out of town will not trade with a city known to have an epidemic of small-pox. This applies to wholesale and retail dealers alike, and a recurrence of an epidemic as severe as that of 1882–'03 would mean the loss of millions of dollars in trade.

It is very evident that we will have more or less small-pox during the next two years, and it is, therefore, important that the Health Department be furnished with means to combat the disease. I, therefore, respectfully recommend that a liberal appropriation be made for this specific purpose.

SEWERAGE.

I feel that I cannot appeal too strongly for an adequate sewer system. Baltimore has a mild and salubrious climate, and its markets are supplied at all times with the freshest and best of meats, fruits and vegetables in great variety, and should therefore be one of the most healthful cities in the country. On the contrary, there are few cities in the United States that has not a lower average of deaths. It is true that our death rate is comparatively large, due in a great measure to the large proportion of negroes; but even when we eliminate the negro from our calculations the death rate is still higher than it should be. We believe that one of the most important factors in maintaining so high a death rate is largely due to the absence of a general sewer system, and the consequent large number of earth closets, and to surface drainage. One of the principal reasons why Baltimore has not had a sewer system is the facility with which surface drainage has been carried off. Built on rolling land, storm water is easily carried off, and after each heavy rain the

streets are left comparatively clean. Heavy rains are not of frequent occurrence, and a large part of the time the gutters are extremely filthy. If the surface drainage was rain water only the conditions would not be altogether bad, but unfortunately as conditions are, not only storm water but that from kitchens, bath rooms and in many cases from closets, flows over the alleys and streets, and in some cases percolates through the soil, spreading disease germs.

This is not the only evil resulting from the absence of sewers. It is estimated that there are over 90,000 earth closets in the city. The enormous amount of polluted matter flowing daily into these wells has saturated the soil with dangerous organic matter. These closets not infrequently receive the discharges from patients suffering with typhoid fever. Wherever there is polluted matter flies are attracted, and they collect the germs on their legs and bodies, and later deposit them on food and the edges of drinking vessels, whence they are readily taken into the system.

It is well known that these closets are breeding places for millions of mosquitoes every year, and it has been scientifically demonstrated that the mosquito is the most active agent in the transmission of malaria.

Experiments conducted by the United States Government at Havana have proved conclusively that if malaria is to be obliterated from cities the mosquito must be prevented from breeding, but as long as cesspools are allowed to exist this will be impossible.

Overflowing cesspools are the cause of the most frequent nuisances this department has to contend with. Complaints of such nuisances come to us from all sections of the city, with the result that from 35,000 to 50,000 inspections of cesspools are made annually.

The overflow from these cesspools is generally into badly paved alleys, but it eventually finds it way to the gutters, and then is carried by storm water to the basin. This emptying of polluted matter from cesspools, together with the filth

from the streets, into the harbor has been going on for years, with the result that the bottom of the harbor is filled with organic matter that becomes particularly offensive with the advent of warm weather, which condition obtains until cold weather. Whenever the harbor is dredged, or whenever vessels enter the harbor, which is of constant occurrence, the conditions are almost unbearable.

There are in Baltimore every year from 175 to 200 deaths from typhoid fever. This is a small percentage of the total deaths, but we believe that with a proper sewer system the mortality from this cause would be greatly reduced, and many valuable lives saved to the community.

The sensible thing to do is to put the city in a proper sanitary condition so that it would be impossible for an epidemic of typhoid fever, diphtheria or cholera to occur. A good sewer system, together with modern paved streets and alleys, would go a long way towards making Baltimore one of the most healthful cities in our broad land.

HOSPITAL FOR INFECTIOUS DISEASES.

I must once more call attention to the importance of providing a hospital for the care of persons suffering with the minor infectious diseases. During the past year the department has felt keenly the want of such a hospital. The number of cases of scarlet fever was much larger than for several years past, while the number of cases of diphtheria and measles was above the average. We have found by experience that it is impossible to properly isolate cases of infectious disease in the homes of the patients. The parents must be permitted to earn means of support for the families, and, in case of sickness, money must be procured for the pay of physicians and for medicine. The result is that parents frequently leave the rooms of the patient to carry with them the germs of disease which are carried to some child, who perhaps would have escaped the malady. Another argument in favor of a hospital is the fact that very often children have a mild attack of scarlet fever,

so mild in fact as to cause little or no anxiety on the parts of the parents. Desquamation follows, and before it has stopped the child is permitted to go into the streets and play with other children. The result is that the disease is spread from house to house, and in some instances scarlet fever in a malignant form is traced to a very mild case.

Careless people often shake bed clothing and rugs from the windows of rooms where there is scarlet fever, with the result that the germs are spread broadcast. If Baltimore were provided with a hospital for the care of these cases the liability to the transmission of disease would be greatly lessened. That there is no danger to the community immediately surrounding such a hospital has been demonstrated by the experience of Boston and other cities. It has also been shown that wherever such a hospital was established it was found that the little sufferers could receive better attention in most cases than they could at home, and that the demand for beds was greater than the supply.

SANATORIA FOR CONSUMPTIVES.

Your attention is earnestly directed to the importance of adopting measures for the prevention and cure of tuberculosis. It is well known that tuberculosis causes more deaths than diphtheria, scarlet fever, typhoid fever, measles, smallpox, mumps and whooping-cough combined. In the United States it is estimated that about 12 per cent. of the total deaths are due to consumption. In Baltimore the past five years there was a total of 51,716 deaths. Of this number, 6,553 or 12.67 per cent. were caused by consumption. This death rate is appalling, particularly when it is known that the disease is not only preventable, but in many cases curable. Perhaps the first thing to consider in this connection is the prevention of the disease. This may be accomplished; first, by isolating the patient afflicted with the consumption, together with the destruction of the sputum; and, second, by the adoption of such measures by the Mayor and City Coun-

cil as will effectually put a stop to indiscriminate expectoration. A person affected with consumption will throw off in sputum millions of bacilli every twenty-four hours. If this sputum is thrown upon the floor of a public conveyance or public buildings, or upon the footways, it speedily dries, and then every passing wind gathers up the bacilli and distributes them in all directions. With every breath persons are liable to take in large numbers of the germs, and if the person so receiving them is in a receptive condition they will find a lodgment, and in the course of a few weeks the dread disease will make its presence known.

As for the cure of the disease this is best brought about, not by medicine so much as by fresh, pure air, sunshine, sanitary surroundings and an abundance of nourishing food. That these conditions are essential to the cure of the disease is demonstrated by the experience of Germany, France, and to a small extent by several of the United States, where sanatoria have been established. By way of illustration let me refer to a statement recently made after a careful investigation by the health officers of Hamburg. "That where the family incomes are from $300 to $400 per annum the death rate from consumption is 55.4 per cent., while where the incomes are from $5,000 to $15,000 the death rate from the same cause is 7.5 per cent.

It is very apparent that it is persons of small incomes who suffer most from the disease, and who, if the disease is to be stamped out or lessened, should receive the assistance of the city and State. I would, therefore, suggest that the city and State jointly establish suitable sanatoria for consumptives. For this purpose it is not necessary to go beyond the borders of our own State. There is not, in my judgment, a locality better adapted to such a purpose than the Blue Ridge Mountains. There can be had fresh, pure air, sunshine, perfect drainage and an abundance of pure food. Land is comparatively cheap, and the establishment of suit-

able sanatoria would not entail burdensome taxation upon our people. Many of the patients could be given employment in the open air, which would not only be beneficial to them, but their labor would assist materially in supplying the sanatoria with fruits and vegetables—thus, in a measure, reducing the cost of maintenance.

Yours respectfully,

JAMES BOSLEY, M.D.,
Commissioner of Health.

REPORT

—OF THE—

Assistant Commissioners of Health.

REPORT.

JAMES BOSLEY, M.D.,
Commissioner of Health.

DEAR SIR: I respectfully submit to you nine (9) maps, showing the location of infected houses in cases of diphtheria, scarlet fever and typhoid fever. The other maps—tuberculosis, pneumonia, broncho-pneumonia, cancer, alimentary canal disease of children—show where deaths have occurred during the year 1903.

TYPHOID FEVER.

As usual the disease was distributed over the entire city, but was less frequent among those citizens that are known to be careful about their drinking water. There were 768 cases reported and 189 deaths, the latter indicating about 1,900 cases within the city during the year. While we believe that an infected water is the most frequent cause of this fever, yet a more effectual control will be obtained by insuring a pure milk as well as a pure water supply. To illustrate this, I will recite very briefly one instance of a local outbreak being produced by the supply of milk. In a large factory in this city there are employed many hundreds of workers, principally women. By a report from the district nurses the attention of the Health Department was called to an unusual number of cases of typhoid fever occurring amongst these employees. The manufacturers were at once telephoned. They gladly offered all facilities for the department to ascertain facts, because they themselves were becoming somewhat alarmed and were about to call on the department for assistance. Dr. William Royal Stokes, city

bacteriologist, was detailed to examine into the local condition. His report showed the workrooms to be in a good sanitary condition. He found that the firm, in order to offer facilities for the factory hands to obtain a good lunch at reasonable rates, had provided a lunch counter or room which supplied milk, besides other usual articles sold in dairy lunch rooms. Specimens of water and milk were obtained, also the name and address of the milkman who brought the milk. Drs. Stokes and Johns were further detailed to go to the milkman's farm, take photographs of the different places where the milk was handled, and to bring back specimens of milk, ice and water. The examination of the water taken from the factory showed it to be ordinary city water—no better, no worse; but the milk showed the presence of a large number of colon bacilli. The examination of the specimen of milk, water and ice taken from the farm showed colon bacilli in all three. Immediately the sale of the milk was stopped, and no more cases of typhoid fever developed. There were twenty-six (26) cases of the fever all told, and at least four (4) died.

In passing it is interesting to note that in all other respects the milk was the finest brought into the city, it showing four and a-half (4½) per cent. butter fat. This shows very conclusively that all dairy farms should be under the inspection of the health officials of the city, and the dairymen licensed by the Department.

TUBERCULOSIS.

A long list of deaths was again recorded during the year—1,323 in all. But, besides this, it must be remembered that many deaths reported to be due to bronchitis, bronchopneumonia and pneumonia really have as a primary cause tuberculosis. We do not believe that citizens die of simple bronchitis between the ages of fifteen and fifty years, but it is often so reported. The following tables have been constructed to summarize the principal facts:

Deaths by Months—Sex, Color and Social Condition.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Males	71	65	69	65	55	49	67	55	51	53	55	58	713
Females	49	41	65	60	44	50	49	42	51	45	59	55	610
White	86	77	81	85	65	68	78	60	78	69	78	81	906
Negroes	34	29	53	40	34	31	38	37	24	29	35	32	*416
Married	49	45	41	54	41	34	43	38	41	37	55	40	518
Single	63	49	76	61	51	54	59	50	52	49	41	60	665
Widowers	5	7	8	4	4	4	5	4	1	5	7	5	59
Widows	4	5	9	4	3	6	7	3	6	5	8	8	67
Divorced	.....	.....	.....	2	.....	.....	1	.....	1	.....	2	.....	6
Unknown	.....	.....	.....	.....	.....	1	1	2	2	2	1	.....	8
Total	120	106	134	125	99	99	116	97	102	98	114	113	1323

*November, one (1) Chinaman.

The next table shows classification by color and age:

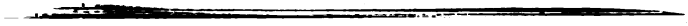
AGE.	White.	Colored.	Total.
Under 1 year	28	12	40
Between 1 and 2 years	22	11	33
" 2 " 5 "	13	25	38
" 5 " 10 "	9	18	27
" 10 " 15 "	11	28	39
" 15 " 20 "	72	58	130
" 20 " 25 "	97	56	153
" 25 " 30 "	101	42	143
" 30 " 35 "	104	44	148
" 35 " 40 "	107	28	135
" 40 " 45 "	77	32	109
" 45 " 50 "	67	20	87
" 50 " 55 "	60	22	82
" 55 " 60 "	42	5	47
" 60 " 65 "	35	8	43
" 65 " 70 "	32	4	36
" 70 " 75 "	17	3	20
" 75 " 80 "	11	.....	11
" 80 " 85 "	1	.....	1
Total	906	416	*1322

*Add to this one (1) Chinaman.

Average age under 1 year	6 months.
" between 1 and 2 years	17 "
" " 2 " 5 "	5.36 years.
" " 5 " 20 "	15 "
" above 20 years	39.44 "
" of all, white and colored	32.85 "
" of all whites	35.53 "
" of all colored	27.12 "

PNEUMONIA.

Until we can with greater certainty and clearness differentiate the varieties of pneumonitis, we shall always have much difficulty in discovering the number of cases of genuine frank pneumonia that is probably produced by the *pneumococcus lanceolatus*. It must be true that many death certificates, giving pnemonia as the cause of death, means a terminal pneumonia—an accidental additional cause of death. There were 791 deaths due to pneumonia this year, of these 518 were white people and 271 colored. (In addition there were two Indians.) Tabulated by ages and color, we get the following:



The next table shows classification by color and age:

518 were two Indians.) Tabulated by ages and color, we get the following:

CANCER.

This disease caused the death of 311 people, as compared with 320 in 1902, divided as follows: 285 white, 26 colored; 101 males, 210 females.

CLASSIFIED ACCORDING TO THE ORGAN OR PART OF THE BODY INVOLVED.

Antrum (Highmore)	1	Omentum	1
Bladder (urinary)	5	Ovaries	2
Breast	29	Pancreas	5
Cheek	1	Penis	1
Clitoris	1	Peritoneum	1
Face	5	Pharynx	1
Gall bladder	1	Rectum	15
Glands	1	Scapula	1
Hip	1	Skull	2
Intestines	16	Stomach	101
Jaw	1	Thorax	1
Larynx	1	Throat	3
Lip	1	Thyroid	1
Liver	33	Tongue	5
Mediastinum	1	Uterus	64
Mesentery	1	Vulva	1
Mouth	1	Not specified	5
Œsophagus	1		

CLASSIFIED ACCORDING TO SOCIAL CONDITIONS.

Single	39	Married	176
Widows	79	Widowers	17

Average age at death of all, both white and colored.....56.957 years.
" " " of white.....57.259 "
" " " of colored.....53.571 "

Average age at death, according to the most frequent organ involved:

Stomach (101).....61.191 years.
Uterus (64).....51.750 "
Liver (33).....59.333 "
Breast (30).....55.500 "
Intestines (16).....56.625 "
Rectum (15).....59.400 "

Females who died of cancer not involving the external or internal genitals—this does not include the "not specified, 5":

Bladder	2	Mesentery	1
Cheek	1	Mouth	1
Face	1	Pancreas	2
Gall bladder	1	Rectum	11
Intestines	10	Scapula	1
Jaw	1	Stomach	48
Liver	21	Thorax	1
Mediastinum	1	Thyroid	1

Making a total of 104.

DISEASES OF THE ALIMENTARY CANAL.

The number of deaths of children five years old or less is 568, being 173 less than last year, when the number was 741. More favorable weather, no doubt, had considerable to do with this lessening; yet it is to be noted that the deaths are more and more confined to the poorer streets of the city, where unhygienic environments and lack of money prevent the parents from taking the very best of care of the feeding of children.

The 568 deaths were divided as follows:

Males	329	White	431
Females	239	Colored	137

The following table will give the ages and color of the children, and the months in which the deaths occurred:

Month.	Under 1 yr.		Bet. 1 and 2 yrs.		Bet. 2 and 5 yrs.		Total.	
	White	Col.	White.	Col.	White.	Col.	W.	C.
January	7	1	1				8	1
February	7		2				9	
March	2		4		1	1	1	1
April	2			1			2	1
May	2						2	
June	56	13	6	1	4		66	14
July	146	59	10	5	4	4	160	68
August	80	26	17	5	7	2	104	33
September	28	9	7	1	4		39	10
October	17	3	5		1		23	3
November	8	4	1	2			9	6
December	2						2	
Total	357	115	53	15	21	7	431	137

SCARLET FEVER AND DIPHTHERIA.

Both these diseases increased considerably over 1902. Scarlet fever almost trebled, the number being 1,224 cases as compared with 481. This disease is much more difficult to limit than diphtheria because of the long period of desquamation subsequent to the fever, during which time the child is apt to move about the house, and even in the street. The physicians usually cease to visit the patient when the fever subsides, and no special care is used to protect others. This applies especially to the poorer people, who are more or less huddled together. I believe that the disease spreads more readily among the poor for two reasons: First, because the families have not sufficient room; and, second, because the antiseptic baths are not given, or only imperfectly administered. I confidently believe that the latter precaution, thoroughly carried out, would lessen the disease to a considerable degree. Yours respectfully,

C. HAMPSON JONES, M.D.,
Assistant Commissioner.

REPORT.

JAMES BOSLEY, M.D.,

Commissioner of Health.

SIR: I have the honor to herewith submit the report of the Quarantine Hospital for the year ending December 31, 1903.

During the year nine hundred and forty vessels have been boarded and inspected (see Table 1), and from these vessels we have collected and paid into the City Treasury the sum of $16,140.21. (See Table 2.)

Table 3 shows the number of vessels, with sickness on board, or from infected ports, detained at Quarantine for disinfection and fumigation. There were eighteen in all.

Sixty-nine persons were received at this hospital during the year. (See Table 4.) Of these, fifty-three were cases of small-pox—forty-two of whom came from the city and ten from Baltimore county. Fifteen persons were quarantined because they came in contact with the disease; two deaths occurred.

The cost of maintaining the Quarantine Station for the year was: For salaries, $11,101, and for general expenses, $5,850. A considerable increase in the expense account will occur upon the completion of the detention house for coal, oil, etc.

I must again call your attention to the fact that a new and more substantial boat for the proper conduct of the duties of this service is an imperative necessity. The additional duties that will be imposed upon this hospital, of transporting not only the small-pox from the city, but also all those

who have come in contact with it, will require a boat properly equipped for such service. I would also recommend the painting of the buildings and the renewal of the plumbing in the hospital. It is in a most deplorable condition, having been in constant use for twenty years.

In conclusion, I desire to thank Dr. T. W. Clarke for his intelligent assistance, and to say that the employees have performed their duties in a manner deserving the highest praise.

Very respectfully,

S. O. HEISKELL,
Assistant Commissioner of Health and Quarantine Physician of the Port.

TABLE No. 1.

SHOWING THE NUMBER OF VESSELS BOARDED AND INSPECTED AT THE QUARANTINE FOR THE YEAR ENDING DECEMBER 31, 1903.

MONTHS.	CLASS OF VESSELS.					
	Steamships.	Ships.	Barks.	Brigs.	Schooners.	Total.
January	53	.....	2	.....	.....	55
February	39	1	3	.....	1	44
March	49	2	5	.....	.....	56
April	56	2	4	.....	.....	62
May	71	1	2	.....	36	110
June	82	2	6	1	33	124
July	91	1	7	.....	35	134
August	80	.....	4	1	19	104
September	65	1	5	1	8	80
October	58	.....	1	.....	11	70
November	52	1	3	.....	2	58
December	41	.....	.....	.....	2	43
Total	737	11	42	3	147	940

TABLE No. 2.

SHOWING THE AMOUNT OF MONEY RECEIVED FOR QUARANTINE FEES AND PAID TO THE CITY REGISTER FOR THE YEAR ENDING DECEMBER 31, 1903.

MONTHS.	CLASS OF VESSELS.						
	Steamships.	Ships.	Barks.	Brigs.	Schooners.	Care of County Patients.	Total.
January	$1,111 16	.....	$21 34	.....	.....	.....	$ 1,132 50
February	920 88	$ 30 06	27 75	.....	$ 2 00	.....	980 69
March	1,113 12	45 73	36 11	.....	.....	.....	1,194 96
April	1,065 27	48 64	23 81	.....	.....	$42 50	1,180 22
May	1,335 19	16 35	10 07	.....	176 21	43 00	1,580 82
June	1,453 82	29 79	78 21	$ 3 63	151 01	.....	1,716 46
July	1,578 04	15 59	64 57	.....	155 54	.....	1,813 76
August	1,401 63	.....	38 89	3 63	105 10	.....	1,549 25
September	1,300 61	14 35	46 96	3 63	62 50	.....	1,428 05
October	1,222 09	.....	29 68	.....	55 45	.....	1,307 22
November	1,181 50	15 72	58 20	.....	7 51	.....	1,262 93
December	983 11	.....	.....	.....	10 24	.....	993 35
Total	$14,666 42	$216 23	$435 59	$10 89	$725 56	$85 50	$16,140 21

TABLE No. 3.

SHOWING THE NUMBER AND CLASS OF VESSELS DETAINED AT QUARANTINE FOR CLEANSING AND DISINFECTION FOR THE YEAR ENDING DECEMBER 31, 1903.

MONTHS.	CLASS OF VESSELS.					
	Steamships.	Ships	Barks.	Brigs.	Schooners.	Total.
January	1					1
February						
March						
April						
May	1					1
June	3					3
July	1					1
August	3					3
September	7					7
October	2					2
November						
December						
Total	18					18

TABLE No. 4.

SHOWING THE NUMBER OF PATIENTS TREATED AT THE QUARANTINE HOSPITAL FOR THE YEAR ENDING DECEMBER 31, 1903.

DISEASE.	Remaining Over from 1902.	Received in 1903.	Discharged in 1903.	Died.	Remaining in Hospital.	Total.
Small-pox	1	53	52	2		54
Quarantined		15	15			15
Total	1	68	67	2		69

Supplementary Report on Tuberculosis.

JAMES BOSLEY, M.D.,
Commissioner of Health.

DEAR SIR: "The prevention and cure of tuberculosis" has been an absorbing topic for many years. The interest of the people has become greater as year by year it has become more evident to them that the dreaded disease can be prevented, and that it can be cured. The Legislature of Maryland (1902) showed the growing interest of the people of this State by passing an Act giving Governor Smith the power to name a Tuberculosis Commission, whose duty should be to obtain facts concerning the ravages of the disease in this State, and to recommend to the Legislature of 1904 any feasible methods to be adopted to stamp out the disease. An excellent Commission was named by Governor Smith, consisting of Dr. W. S. Thayer, chairman; Dr. Frank Hines, of Chestertown; Dr. Lillian Welsh; Mr. John Glenn and Mr. George Steuart Brown, which Commission at once elected Mr. John Glenn secretary and appointed Dr. Marshall L. Price, Medical Officer. Towards the close of the second year of its work, the Commission adopted the suggestion of Dr. John S. Fulton, secretary of the Maryland State Board of Health, that it should get up an exhibition that would present to the eyes of the public, and members of the Legislature of 1904, that which would be embodied in the report of the Commission. The success of the exhibition, which was given last January, in McCoy Hall, was far beyond the expectations of its most sanguine promoters, and for an entire week the hall was crowded with citizens and strangers who desired to see the exhibition and listen to the highly instructive lectures.

After all this work and the expenditure of time and money we were visited by the great disaster, the fire of February 7, 1904,, which for a time, a short time we hope, prevented the Legislature from doing more than to receive the report and continuing the Commission for another two years.

"Lest we forget."

You as a Commissioner of Health of Baltimore, determined to have reproductions made of the tuberculosis map which was prepared and exhibited at thetuberculosis exhibition by this department, so that the public and its officials should not forget that the exhibition in January was not a demonstration of a mere fancy or dream, but of a living fact, always with us, heaping its burden of sickness and death upon us all.

It was only by the splendid work of Dr. Lillian Welsh and Dr. Mary Sherwood, with their corps of assistants, that the map could be prepared in time for the exhibition. They went over the death records of this city from 1891 to 1900, inclusive, and recorded on cards all the deaths from tuberculosis; and then we dotted the location of the deaths on the large map bought for this purpose. In order to include the map in our annual report, a reduced photograph of the original map was made; the original broad, red lines marking the boundaries of the twenty-four wards are black in this copy, and the numbers of the wards are in large black figures. The red dots show the places where the deaths from tuberculosis occurred.

Those citizens who are acquainted with the city will at once recognize the crowded portions and the habitations of our colored population. Glance along the black line—which is Druid Hill avenue, marking the separation of the Seventeenth and Eleventh wards—and then continue northward on Druid Hill avenue to North avenue. To the left of Druid Hill avenue the colored population predominates. You will find in other portions of the map this fact brought out—that wherever you have the people, white or colored, crowded

together in poorly ventilated and poorly lighted houses, there you find the prevalence of tuberculosis.

To successfully fight tuberculosis several things are necessary—i. e., an abundance of sunlight and fresh, pure air, dry soil, dry houses and plenty of good, nutritious food. It is this great problem that is now before the people. Let the city and State establish well-equipped sanatoria; let the city widen the dark streets, lanes and alleys; prohibit the erection of a dwelling-house on streets less than thirty feet wide; tear down blocks of miserable dwellings and make public playgrounds and breathing places for the poor and their children; (you won't find any such places on the map where the disease is most abundant;) establish a sewerage system in order to get rid of privy wells, and then the good work of the district nurses and the various charity organizations in supplying food and nursing will begin to show permanent effect.

From the records of ten years (1891 to 1900) the following tables have been made. There were 11,582 deaths in all. The first table gives the total number of deaths from various ages, and the months in which they occurred:

Ages.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Under 1 year	30	36	61	47	27	41	55	32	48	28	22	32	459
Between 1 and 5 years...	58	46	65	70	56	56	40	36	26	39	39	48	579
" 5 " 10 " ...	18	19	35	28	47	20	18	16	18	22	16	9	266
" 10 " 20 " ...	107	79	134	121	121	92	106	95	84	70	96	114	1219
" 20 " 30 " ...	290	282	284	276	250	243	258	229	247	289	266	286	3200
" 30 " 40 " ...	236	240	231	179	183	177	178	169	175	204	184	211	2367
" 40 " 50 " ...	143	129	159	118	132	106	108	125	109	136	120	152	1537
" 50 " 60 " ...	95	95	97	83	95	51	77	89	68	73	84	84	901
" 60 " 70 " ...	64	58	89	47	59	39	56	36	43	53	71	49	664
" 70 " 80 " ...	19	21	23	25	20	25	10	26	17	22	17	27	252
" 80 " 90 " ...	7	5	4	4	6	2	2	4	4	.....	2	6	46
" 90 " 100 "	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	2	2
Total.....	1067	1010	1182	998	996	852	908	857	839	936	917	1020	11582

If, now, we compare a similar table (made from the records of 1903) with this we will note the following:

Ages.	Average Number Per Year.	For 1903.
Under 1 year	45.9	40
Between 1 and 5 years	57.9	71
" 5 " 10 "	26.6	27
" 10 " 20 "	121.9	169
" 20 " 30 "	320.0	296
" 30 " 40 "	236.7	283
" 40 " 50 "	153.7	196
" 50 " 60 "	99.1	129
" 60 " 70 "	66.4	79
" 70 " 80 "	25.2	31
" 80 " 90 "	4.6	1
" 90 " 100 "	.2	0

The next table shows the number of males and females:

Month.	Male.	Female.	Total.
January	539	528	1,067
February	558	452	1,010
March	638	544	1,182
April	514	484	998
May	527	469	996
June	411	441	852
July	457	451	908
August	429	428	857
September	443	396	839
October	471	465	936
November	468	449	917
December	554	466	1,020
Total	6,009	5,573	11,582

The average number of males and females per year of these ten years, compared with 1903, was:

Sex.	Average Number Per Year.	For 1903.
Males	600.9	713
Females	557.3	610

Table No. 3 shows the number of whites and negroes per month, from 1891 to 1900.

Color.	Whites.	Negroes.	Total.
January	800	267	1,067
February	729	281	1,010
March	800	382	1,182
April	675	323	998
May	670	326	996
June	592	260	852
July	649	259	908
August	641	216	857
September	591	248	839
October	690	246	936
November	670	247	917
December	723	297	1,020
Total	8,230	3,352	11,582

Yours respectfully,

C. HAMPSON JONES,
Assistant Commissioner of Health.

VITAL STATISTICS

—OF THE—

Sub-Department of Health

—OF—

Baltimore City

—FOR THE—

YEAR ENDING DECEMBER 31, 1903.

TABLES.

VITAL STATISTICS OF THE CITY OF BALTIMORE FOR THE YEAR ENDING DECEMBER 31, 1903.

Estimated population, white			451,000
" " colored			82,000
Total			533,000
Marriages reported			5,593
Rate per 1,000 population			10.50
Births reported, white males	3,613		
" " white females	3,388		
		7,001	
Births reported, colored males	815		
" " " females	804		
		1,619	
Total births reported		8,620	
Birth rate per 1,000 population, whole			16.17
" " " " white			15.52
" " " " colored			19.74
Still births			741
Total mortality, white males	4,027		
" " white females	3,632		
		7,659	
Total mortality, colored males	1,214		
" " " females	1,268		
		2,482	
Total deaths reported		10,141	
Annual death rate per 1,000 population, whole			19.03
" " " " less non-residents			18.30
" " " " white			17.00
" " " " less non-residents			16.27
" " " " colored			30.27
" " " " less non-residents			29.45

Total number of deaths from typhoid fever	189
" " " " measles	77
" " " " scarlet fever	84
" " " " whooping cough	64
" " " " diphtheria and croup	160
" " " " influenza (la grippe)	92
" " " " dysentery	40
" " " " tuberculosis of the lungs	1,186
" " " " cancers	370
" " " " anæmia	33
" " " " diseases of the heart	757
" " " " bronchitis	235
" " " " pneumonia	1,101
" " " " diarrhœa and enteritis, under 5 years	550
" " " " diarrhœa and enteritis, over 5 ys.	68
" " " " Bright's disease	693
" " " " puerperal hemorrhage	2
" " " " puerperal septicæmia	57
" " " " puerperal convulsions	22
" " " " sunstroke and heat	15
" " " " accidents	402
" " " " suicides	58
" " " " under five years of age	3,102

Deaths in Public Institutions.

Baltimore City Jail	7
Penitentiary	10
Hospitals and asylums	1,671
Total	1,688
Number of coroners' inquests	1,056
" autopsies	88
" non-residents dying in the city, white	322
" non-residents dying in the city, colored	67

TABLE No. I—SHOWING THE NUMBER OF INFECTIOUS AND CONTAGIOUS DISEASES REPORTED DURING THE YEAR 1903.

DISEASES.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Small-pox	2	6	10	5	13	1	1	.....	1	1	.....	1	41
Diphtheria	116	98	86	110	106	57	94	112	142	175	177	163	1436
Pseudo-Membranous Croup	.....	2	2	4	1	.....	1	1	1	3	5	5	25
Scarlet Fever	55	38	59	93	139	103	115	122	140	106	131	123	1224
Typhoid Fever	28	36	29	25	27	60	131	146	128	85	40	33	768
Measles	1235	550	237	82	44	21	9	4	3	6	6	6	2203
Mumps	15	21	26	44	40	30	18	9	4	19	9	12	247
Whooping Cough	28	15	16	12	3	14	24	28	27	25	29	12	233
Varicella	50	18	26	9	20	10	3	6	9	11	33	61	256
Tuberculosis Pulmonalis	42	38	53	47	53	42	50	44	41	32	43	66	551
Total	1571	822	544	431	466	338	446	472	496	463	473	482	6984

TABLE No. II.—SHOWING THE NUMBER OF DEATHS ACCORDING TO AGES DURING THE YEAR 1903.

AGES.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Under 1 year	183	157	154	129	117	183	418	260	152	156	132	133	2174
Between 1 and 2 years	51	51	50	34	17	23	39	49	37	34	39	33	457
" 2 " 5 "	59	50	39	38	38	25	49	33	35	32	31	42	471
Total under 5 years	293	258	243	201	172	231	506	342	244	222	202	208	3102
Between 5 and 10 years	23	25	20	30	24	16	17	20	20	26	15	24	260
" 10 " 15 "	14	6	20	14	15	14	19	11	17	14	14	17	175
" 15 " 20 "	25	16	26	24	25	19	27	38	20	23	22	35	300
" 20 " 30 "	91	56	82	80	78	61	76	64	61	75	67	76	867
" 30 " 40 "	89	74	79	91	74	62	78	69	58	71	83	92	920
" 40 " 50 "	111	95	76	91	73	70	75	71	80	73	85	76	976
" 50 " 60 "	110	93	104	80	86	65	75	73	76	78	79	101	1020
" 60 " 70 "	111	97	109	83	90	74	93	67	61	90	84	120	1079
" 70 " 80 "	105	90	90	69	78	66	95	61	58	73	70	92	947
" 80 " 90 "	49	39	40	33	35	27	32	35	29	27	32	38	416
" 90 " 100 "	8	12	10	6	2	1	3	3	2	2	3	6	58
" 100 " 110 "	1	1	2	3	1	1	.....	5	.....	1	.....	1	16
Over 110 years	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Unknown age	.....	.....	.....	.....	.....	.....	1	1	1	1	.....	.....	4
Total	1030	862	902	805	753	707	1097	860	707	776	756	886	10141

TABLE No. V.

Showing the Nativity of the Decedents for the Year 1903.

Nativity.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Total
United States—White males	323	271	246	227	197	234	341	275	226	238	226	257	3061
" " White females	257	250	246	211	202	182	297	252	177	214	200	251	2739
Foreign—White males	101	76	81	72	86	71	84	60	49	79	75	89	923
" " females	113	82	92	75	70	53	64	64	64	35	79	83	874
Colored males	119	87	113	102	99	80	145	91	83	95	82	90	1186
" females	111	91	119	111	96	82	151	105	85	105	82	104	1242
Unknown white males	1	2	4	5	2	1	5	6	5	4	5	3	43
" " females	2	.....	1	1	.....	.....	3	2	5	2	2	1	19
" colored males	2	2	.....	1	1	3	3	1	6	2	3	4	28
" " females	1	1	.....	.....	.....	1	4	4	7	2	2	4	26
Total	1030	862	902	805	753	707	1097	860	707	776	756	886	10141

Marriages for the Year 1903.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Marriages	414	381	341	555	323	707	338	400	482	564	586	502	5593

TABLE No. VI.

SHOWING THE NUMBER OF BIRTHS REPORTED DURING THE YEAR 1903.

COLOR AND SEX.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
White males	380	285	295	269	259	278	327	314	304	294	283	325	3613
" females	342	225	300	204	260	296	305	276	316	298	238	328	3388
Colored males	55	61	61	56	79	76	75	73	68	73	66	72	815
" females	36	72	66	53	80	74	75	70	79	66	57	76	804
Total	813	643	722	582	678	724	782	733	767	731	644	801	8620
ILLEGITIMATES.													
White males	3	11	17	8	19	16	14	10	22	11	12	12	155
" females	11	8	9	7	19	15	17	12	18	9	12	13	150
Colored males	10	15	12	15	29	14	22	16	20	9	7	15	184
" females	6	20	14	7	28	21	27	19	19	15	9	16	211
Total	30	54	52	47	95	66	80	57	79	44	40	56	700
STILL BIRTHS.													
White males	23	21	25	18	26	26	26	20	30	23	24	38	300
" females	15	18	12	10	17	18	18	21	18	11	15	14	187
Colored males	9	8	11	13	15	14	12	14	13	13	10	12	144
" females	14	8	9	4	12	7	9	8	6	9	12	12	110
Total	61	55	57	45	70	65	65	63	67	56	61	76	741

TABLE No. IX.—SHOWING THE NUMBER OF DEATHS IN HOSPITALS, PUBLIC INSTITUTIONS, INQUESTS, ETC., DURING THE YEAR 1903.

HOSPITALS, INSTITUTIONS, ETC.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Hospitals—Resident, white.....	71	53	49	30	45	54	55	64	58	42	51	62	634
" " colored.....	23	19	24	16	11	18	25	18	17	17	12	27	227
" Non-resident, white..	21	21	21	25	19	24	27	28	26	25	28	21	286
" " colored	7	2	4	6	3	2	7	8	8	5	4	5	61
OTHER INSTITUTIONS, ASYLUMS, ETC.													
Resident, white	40	30	32	19	22	31	38	38	19	24	23	19	335
" colored.....	3	4	7	9	7	5	18	8	8	7	2	8	86
Non-resident, white	2	3	4	8	4	1	2	2	2	1	3	4	36
" colored.	.....	2	.....	1	....	1	.....	.....	1	.....	.....	1	6
Jail.....	.....	1	1	.....	1	.....	.....	.....		1	2	.....	7
Penitentiary	.....	2	2	1	1	.....	2			1	.....	.....	10
Total.	167	137	144	115	112					3	125	147	1688
Coroners' Inquests.....	99	88	71								90	101	1056
Autopsies.....	8	11									9	9	88

TABLE No. XIII.

SHOWING THE NUMBER OF DEATHS FROM ALL CAUSES DURING THE YEAR 1903.

DISEASES.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
I.—GENERAL DISEASES.													
1. Typhoid fever	15	7	8	14	11	9	19	26	28	20	19	13	189
2. Typhus fever													
3. Recurrent fever													
4. Intermittent fever and malarial cachexia	1	2		3	1		1	1		4	3	2	18
5. Smallpox				1						1			2
6. Measles	26	21	14	5	5		3				2	1	77
7. Scarlet fever	2	1	4	6	11	6	11	11	8	9	6	9	84
8. Whooping cough	6	2	4	3	3	7	9	10	7	6	3	4	64
9. Diphtheria and croup—													
a. Diphtheria	11	12	8	8	11	3	6	7	10	18	17	19	130
b. Membranous croup		2		2	2	1	2		2	4	2	5	22
c. Croup		3				1				1	2	1	8
10. Influenza (La Grippe)	11	32	29	6	7	2					2	3	92
11. Miliary fever													
12. Asiatic cholera													
13. Cholera nostras						2	3		2	1			8
14. Dysentery	3	1	1	3	2	4	7	9	5	3	1	1	40
15. Bubonic plague													
16. Yellow fever													
17. Leprosy													
18. Erysipelas	6	6	2	3	3	3					2	1	26
19. Other epidemic affections—													
a. Mumps				1									1
b. Varicella													
c. Rubeola, etc													

20. Purulent infection and septicæmia	3	4	3			1	8	6	4	1	2	3	35
21. Glanders and farcy													2
22. Malignant pustule and charbon	1	1											
23. Rabies													1
24. Actinomycosis, trichinosis, etc								1					
25. Pellagra													
26. Tubercle of the larynx	5	2	9	1	2	1	1	3	2	1	1	2	30
27. Tubercle of the lungs	102	91	109	115	100	90	97	87	92	91	102	110	1186
28. Tubercle of the meninges	4	6	7	10	5	6	8	4	6	3	4	5	68
29. Tubercle of the abdominal cavity	5	2	8	6	3	3	7	1	2	3	2	4	46
30 Potts' disease			1						2		2		5
31. Abscess (cold and by congestion)					1								1
32. White swelling			1					1	1				3
33. Tubercle of other organs	2	1	1	1	2	2	4	1	1		2	1	18
34. Generalized tubercle	2	2	1			1	2	5	3	1		1	18
35. Scrofula		2				1							3
36. Syphilis	2		2	4			4	2	6	5	1	1	27
37. Blenorrhagia of the adult													
38. Gonococcic infection of children													
Cancers and Other Malignant Tumors—													
39. Cancer of the buccal cavity	3	1	3			1	1		1		2	2	14
40. Cancer of the stomach and liver	11	13	19	5	15	10	18	16	10	19	13	14	154
41. Cancer of the peritoneum, intestines or rectum	3	4	6	1		5	4	5	5	1	2	3	39
42. Cancer of the female genital organs	6	2	4	5	7	7	9	9	8	6	4	6	73
43. Cancer of the breast	4	4	1	2	1	2	2	2	4	5	2	3	32
44. Cancer of the skin		1		1	2		1	1					6
45. Cancer of the other organs and those not specified	4	3	4	5	6	2	5	4	3	10	4	2	52
46. Other tumors (tumors of the female genital organs excepted)	1	1	2	4	1	3	2			2	2		18
47. Rheumatism—acute, articular	4	2	2	3	7	4	7	3	1	3	1	11	48
48. Rheumatism—chronic and gout	2	2			2		1		1			2	10
49. Scorbutus							1						1
50. Diabetes	6	4	4		2	5	9	4	4	7	3	7	55

TABLE No. IX.—SHOWING THE NUMBER OF DEATHS IN HOSPITALS, PUBLIC INSTITUTIONS, INQUESTS, ETC., DURING THE YEAR 1903.

HOSPITALS, INSTITUTIONS, ETC.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Hospitals—Resident, white	71	53	49	30	45	54	55	64	58	42	51	62	634
" " colored	23	19	24	16	11	18	25	18	17	17	12	27	227
" Non-resident, white	21	21	21	25	19	24	27	28	26	25	28	21	286
" " colored	7	2	4	6	3	2	7	8	8	5	4	5	61
OTHER INSTITUTIONS, ASYLUMS, ETC.													
Resident, white	40	30	32	19	22	31	38	38	19	24	23	19	335
" colored	3	4	7	9	7	5	18	8	8	7	2	8	86
Non-resident, white	2	3	4	8	4	1	2	2	2	1	3	4	36
" colored	.....	2	.....	1	.....	1	.....	.....	1	.....	.....	1	6
Jail	.....	1	1	.....	1	.....	.....	.....	1	1	2	.....	7
Penitentiary	.....	2	2	1	1	.....	2	.....	1	1	.....	.....	10
Total.	167	137	144	115	113	136	174	166	141	123	125	147	1688
Coroners' Inquests	99	88	71	85	90	80	110	88	78	76	90	101	1056
Autopsies	8	11	5	8		10	12	3	3	6	9	9	88

TABLE No. XIII.

SHOWING THE NUMBER OF DEATHS FROM ALL CAUSES DURING THE YEAR 1903.

DISEASES.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
I.—GENERAL DISEASES.													
1. Typhoid fever	15	7	8	14	11	9	19	26	28	20	19	13	189
2. Typhus fever													
3. Recurrent fever													
4. Intermittent fever and malarial cachexia	1	2		3	1		1	1		4	3	2	18
5. Smallpox				1						1			2
6. Measles	26	21	14	5	5		3				2	1	77
7. Scarlet fever	2	1	4	6	11	6	11	11	8	9	6	9	84
8. Whooping cough	6	2	4	3	3	7	9	10	7	6	3	4	64
9. Diphtheria and croup—													
a. Diphtheria	11	12	8	8	11	3	6	7	10	18	17	19	130
b. Membranous croup		2		2	2	1	2		2	4	2	5	22
c. Croup		3				1				1	2	1	8
10. Influenza (La Grippe)	11	32	29	6	7	2					2	3	92
11. Miliary fever													
12. Asiatic cholera													
13. Cholera nostras						2	3		2	1			8
14. Dysentery	3	1	1	3	2	4	7	9	5	3	1	1	40
15. Bubonic plague													
16. Yellow fever													
17. Leprosy													
18. Erysipelas	6	6	2	3	3	3					2	1	26
19. Other epidemic affections—													
a. Mumps				1									1
b. Varicella													
c. Rubeola, etc													

20. Purulent infection and septicæmia	3	4	3	.....	.....	1	8	6	4	1	2	3	35
21. Glanders and farcy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22. Malignant pustule and charbon	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
23. Rabies	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
24. Actinomycosis, trichinosis, etc	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1
25. Pellagra	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
26. Tubercle of the larynx	5	2	9	1	2	1	1	3	2	1	1	2	30
27. Tubercle of the lungs	102	91	109	115	100	90	97	87	92	91	102	110	1186
28. Tubercle of the meninges	4	6	7	10	5	6	8	4	6	3	4	5	68
29. Tubercle of the abdominal cavity	5	2	8	6	3	3	7	1	2	3	2	4	46
30 Potts' disease	.....	.....	1	.....	.....	.....	.....	.....	2	..	2	.....	5
31. Abscess (cold and by congestion)	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1
32. White swelling	.....	.....	1	.....	.....	.....	.....	1	1	.....	.....	.....	3
33. Tubercle of other organs	2	1	1	1	2	2	4	1	1	.....	2	1	18
34. Generalized tubercle	2	2	1	.....	.....	1	2	5	3	1	.....	1	18
35. Scrofula	.....	2	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	3
36. Syphilis	2	.....	2	4	.....	.....	4	2	6	5	1	1	27
37. Blenorrhagia of the adult	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
38. Gonococcic infection of children	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cancers and Other Malignant Tumors—													
39. Cancer of the buccal cavity	3	1	3	.....	.....	1	1	.....	1	.....	2	2	14
40. Cancer of the stomach and liver	11	13	19	5	15	10	18	16	10	19	13	14	154
41. Cancer of the peritoneum, intestines or rectum	3	4	6	1	.....	5	4	5	5	1	2	3	39
42. Cancer of the female genital organs	6	2	4	5	7	7	9	9	8	6	4	6	73
43. Cancer of the breast	4	4	1	2	1	2	2	2	4	5	2	3	32
44. Cancer of the skin	.....	1	.....	1	2	.....	1	1	.....	..	.....	.....	6
45. Cancer of the other organs and those not specified	4	3	4	5	6	2	5	4	3	10	4	2	52
46. Other tumors (tumors of the female genital organs excepted)	1	1	2	4	1	3	2	.....	.....	2	2	.....	18
47. Rheumatism—acute, articular	4	2	2	3	7	4	7	3	1	3	1	11	48
48. Rheumatism—chronic and gout	2	2	.....	.....	2	.....	1	.....	1	.....	..	2	10
49. Scorbutus	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
50. Diabetes	6	4	4	.....	2	5	9	4	4	7	3	7	55

TABLE No. XIII—Continued.

Diseases.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
51. Exophthalmic goitre	1	1					2		1	1			6
52. Addison's disease							1	1				1	3
53. Leukæmia	1		1		3			1	1		2	1	10
54. Anæmia and chlorosis	1	1	2	2	5	2	1	4	3	4	5	3	33
55. Other general diseases						1							1
56. Alcoholism, acute and chronic	7	2	5	3	3	3	4	6	3		5	5	46
57. Lead poisoning				1							1		2
58. Other professional intoxications													
59. Other chronic poisonings													
II.—Diseases of the Nervous System and the Organs of Special Sense.													
60. Encephalitis							1	1	1	1	1		5
61. Meningitis, simple	5	4	9	8	7	11	11	7	1	6	5	9	83
" cerebro-spinal	3	2	1	2	2	5	2	3	2	3	2	2	29
" cerebral	1	1	1	4	2	2	1		2	1	1	3	19
" spinal	2			1						1	1	1	6
62. Progressive locomotor ataxia	1		1	3	1	1	2	1		1	2	2	15
63. Other diseases of the spinal cord	2	5	2	2	3	3	1		4	1	2	5	30
64. Congestion and hemorrhage of the brain	43	35	37	28	39	27	36	24	23	23	31	23	369
65. Cerebral softening	5	1	2	2		1	4	1	1	2	2	1	22
66. Paralysis without specific cause	15	20	13	15	18	10	9	13	11	12	9	20	165
67. General paralysis	2	1			1		2		3	1		3	13
68. Other forms of insanity			1							2			3
69. Epilepsy		2		3	2			1	2	2	2	5	19
70. Convulsions, non-puerperal			1								2		3
71. Convulsions of infants	19	19	14	10	9	11	17	6	9	6	5	8	133

72. Tetanus	2		2	3	1	2	2	4	1		2		19
73. Chorea				1						1			2
74. Other nervous diseases	7	5	3	5	6	2	3	5	4	3	2	2	47
75. Diseases of the eye and its adnexa													
76. Diseases of the ear and its adnexa	1	1	2	1	1		1	3	1	1		1	13
III.—Diseases of the Circulatory System.													
77. Pericarditis	2	3		1		1		1	1				9
78. Endocarditis	6	5	5	6	6	3	3	6	2	7	6	3	58
79. Organic heart diseases	77	41	56	61	51	48	55	44	35	64	58	60	650
80. Angina pectoris	7	3	2	1	5	2	2	4		3	5	6	40
81. Affections of the arteries, atheroma, aneurism, etc	16	12	7	12	6	9	7	9	6	8	10	12	114
82. Embolus and thrombosis		1	2	2		1	1				1		8
83. Affections of the veins, varices, hemorrhoids, phlebitis	1					1	1				1		4
84. Affections of the lymphatic system, lymphangitis, etc													
85. Hemorrhages	1	1	1	1		1	2	2	1	1	1	1	13
86. Other diseases of the circulatory system													
IV.—Diseases of the Respiratory System.													
87. Diseases of the nasal fossae													
88. Affections of the larynx			3					1		2	1		7
89. Affections of the thyroid body		1					1	1					3
90. Acute bronchitis	23	15	12	13	10	7	9	4	2	4	9	10	118
91. Chronic bronchitis	13	15	18	7	8	5	6	8	9	8	4	16	117
92. Broncho-pneumonia	57	43	41	20	19	12	18	14	12	16	26	28	306
93. Pneumonia	129	113	102	83	55	35	23	16	29	48	68	94	795
94. Pleurisy	3	2	3	2	1		2	1		3		3	20
95. Congestion of the lungs (including pulmonary apoplexy)	3	1	3	1	3	3	3				2	6	25
96. Gangrene of the lung													

TABLE No. XIII—Continued.

Diseases.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
97. Asthma	2		1	6	8	5	2	1	2	3	1	7	38
98. Pulmonary emphysema	1	1	2	1		1						2	8
99. Other diseases of the respiratory apparatus (phthisis excepted)	5	1	6	2	3	4	2		3	3	7	3	39
V.—Diseases of the Digestive Apparatus.													
100. Affections of the mouth and its adnexa	1			1	1	1	2	1	2				9
101. Affections of the pharynx				2		2						1	5
102. Affections of the œsophagus	2									1	1		4
103. Ulcer of the stomach	1	1	1		2			2	1	3	1	3	16
104. Other affections of the stomach (cancer excepted)	12	9	9	11	11	21	22	22	7	13	12	17	166
105. Diarrhœa and enteritis, under five years	8	5	8	5	6	59	226	131	54	27	15	6	550
106. Diarrhœa and enteritis, over five years	6	5	8	4	4	6	7	5	10	3	5	5	68
107. Intestinal parasites						1							1
108. Hernia and intestinal obstructions	5	10	11	2	4	5	6	7	12	10	6	3	81
109. Other affections of the intestines	1		1	3	3	1	1		2	1	3	5	21
110. Icterus gravis			1			1			1		1		4
111. Hydatid tumor of the liver													
112. Cirrhosis of the liver	5	5	4	12	3	1	7	6	2	10	7	3	65
113. Biliary calculi	1	1	1	2	2	3	1	1	3	3	2		20
114. Other affections of the liver	5	3	4	2	1	1	2	1		7	5		35
115. Affections of the spleen			1										1
116. Peritonitis (non-puerperal)	2	2		1	2	2	4	3	4	3	1		24
117. Other affections of the digestive apparatus (cancer and tubercle excepted)					3		1						4
118. Appendicitis and abscess of iliac fossæ	3	3	7	5	7	7	5	6	3	5	2	7	60

VI.—Diseases of the Genito-Urinary Apparatus and Its Adnexa.													
119. Acute nephritis	6	2	7		3	5	5	2	4	8	9	7	58
120. Bright's disease	70	51	75	71	54	37	58	48	45	57	57	70	693
121. Other diseases of the kidneys and their adnexa	4	1	1	1	2	1	3	5	3	1	1	1	24
122. Calculi of the urinary tract		1								3			4
123. Diseases of the bladder	2	1	1	1	3			1	2	3	4	1	19
124. Diseases of the uretha (urinary abscess, etc.)								1		1			2
125. Diseases of the prostate	1	3	3	1	1	1	3	2		2		4	21
126. Non-venereal diseases of male genital organs	2					1							3
127. Metritis							1						1
128. Uterine hemorrhage (non-puerperal)	1		2										3
129. Uterine tumor (not cancer)	1	1	1	3	1	1	5	1	2	1	2	3	22
130. Other diseases of the uterus	1	1			1	1	1	1	1		1	1	9
131. Cysts and other tumors of the ovary	1		1		1		4				2		9
132. Other diseases of female genital organs	1	3	2	3			1	1	1	2	2	3	19
133. Diseases of the breast (non puerperal nor cancerous)													
VII.—The Puerperal State.													
134. Accidents of pregnancy	3			1	4		2	1	1	2	1	1	16
135. Puerperal hemorrhage	1					1							2
136. Other accidents of labor			1		1		5		1	1	2	1	12
137. Puerperal septicæmia	7	6	6	7	6	2	4	6	2	4	2	5	57
138. Puerperal albuminuria and convulsions	1	2	1	3	4	1		2	1	1	1	5	22
139. Phlegmasia alba dolens							1						1
140. Other accidents of pregnancy (sudden death)							1						1
141. Puerperal diseases of the breast													
VIII.—Diseases of the Skin and Cellular Tissue.													
142. Gangrene	3	1	1	2	5	2	3			1	2	1	21
143. Furuncle (carbuncle)		1						2	1				4

TABLE No. XIII—Continued.

Diseases.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
144. Phlegmon, warm abscess	2	2	1			2				1		1	9
145. Other diseases of the skin and its adnexa (cancer excepted)			1		2	1	2	2			1		9
IX.—Diseases of the Organs of Locomotion.													
146. Affections of the bones	3	1	1	2		4	3	1			2	2	19
147. Arthritis and other diseases of the joints (tubercle and rheumatism excepted)			1					1			1	1	4
148. Amputations (for unspecified disease)													
149. Other affections of the organs of locomotion													
X.—Malformations.													
150. Malformations	8	4	2	1	4	2	2	6	4	5	4	2	44
XI.—Early Infancy.													
151. Congenital debility, jaundice, and sclerema (premature birth)	28	23	27	19	24	27	81	64	39	43	41	34	450
152. Other diseases of infancy		2	2	2	1	2	3	1	1	1		1	16
153. Lack of care (malnutrition, etc.)	26	37	31	37	30	35	50	40	23	31	21	25	386
XII.—Old Age.													
154. Senile debility	37	28	27	23	17	23	23	20	12	16	9	23	258
XIII.—Affections Produced by External Causes.													
155. Suicide by poison	1		1	1	3	4		1	1			1	13

156. Suicide by asphyxia			1		4		1	2	1				1	10
157. Suicide by hanging or strangulation					1	1		1	1	1			2	7
158. Suicide by drowning	1					1								2
159. Suicide by firearms	3	2	1	1	1	2	2	1		1	1	1		16
160. Suicide by cutting instruments				3				1			1	2		7
161. Suicide by a precipitation from a height					1	2								3
162. Suicide by crushing														
163. Suicide by other methods														
164. Fractures:														
a. Of the femur	4	3	1	2	3	3	2	1	4	2		4		29
b. Of the skull	4	6	1	2	1	4	5	2	4			1		30
c. Of the vertabræ			1		1		2	1						5
d. Others	1	1	1			1			3	1				8
165. Dislocations														
166. Other accidental injuries:														
a. Dystocia (child)	2	2	4	1	1	1	1	4	1		1	1		19
b. Electric shock	1	1		1	1	1		1	1	1				8
c. Falls	2	3	3	1	4	3	7	4	8	3	4	3		45
d. Gunshot	1		1			3	1				3			9
e. Mining accidents		1			2									3
f. Railroad accidents and injuries	9	8	4	5	6	2	3	7	6	1	2	8		61
g. Vehicles and horses	1		3		2		1		1		1			9
167. Burning:														
a. Fire (burn)	5	7	3	6	2	1	2	4	3	2	7	7		49
b. Scald (hot liquid)	2				1			1	1	1	1	1		8
168. Burning by corrosive substances														
169. Sunstroke (insolation)							11	4						15
170. Freezing			1											1
171. Electrical disturbances														
172. Accidental drowning	2		4	5	5	5	4	5	8	2	2	2		44
173. Inanition	1													1
174. Absorption of deleterious gases (suicide excepted)	3	2	4	5		1	1				1	4		21
175. Other acute poisonings	1		2					4	2	2	1	4		16

TABLE No. XIII—Concluded.

DISEASES.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
176. Other external violence:													
a. Homicide	.....	3	.....	1	1	3	1	1	2	1	.....	1	14
b. Legal executions	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
c. Other accidents	.....	4	1	.....	3	4	3	1	.....	3	2	1	22
XIV.—ILL-DEFINED CAUSES.													
177. Dropsy	2	.....	1	1	2	.....	.....	.....	1	.....	2	3	12
178. Sudden death (non-puerperal)	3	4	4	6	4	2	2	1	3	1	.....	3	33
179. Unspecified or ill-defined causes	4	4	1	1	4	3	12	9	20	18	11	8	95
Total	1030	862	902	805	753	707	1097	860	707	776	756	886	10141

TABLE No. XVI.

SHOWING THE NUMBER OF DEATHS ANNUALLY FROM TYPHOID FEVER DURING A PERIOD OF SIXTEEN YEARS FROM 1888 TO 1903, INCLUSIVE, MALE AND FEMALE, WHITE AND COLORED, IN THE CITY OF BALTIMORE.

YEAR.	Estimated Population.	WHITE.			COLORED.			Total Males.	Total Females.	Total Deaths.
		Males.	Females.	Total.	Males.	Females.	Total.			
1888	395,899	88	90	178	80	14	94	168	104	272
1889	404,498	88	93	181	23	20	43	111	113	224
1890	413,671	135	109	244	26	31	57	161	140	301
1891	426,917	82	75	157	13	19	32	95	94	189
1892	440,163	90	102	192	19	15	34	109	117	226
1893	453,409	108	120	228	11	16	27	119	136	255
1894	466,665	103	104	207	23	27	50	126	131	257
1895	479,907	82	75	157	21	14	35	103	89	192
1896	493,147	93	81	174	16	14	30	109	95	204
1897	506,398	99	76	175	20	14	34	119	90	209
1898	541,000	96	62	158	19	24	43	115	86	201
1899	541,000	67	52	119	18	16	34	85	68	153
1900	541,000	83	69	152	21	16	37	104	85	189
1901	518,000	66	44	110	11	20	31	77	64	141
1902	525,000	99	73	172	24	24	48	123	97	220
1903	533,000	79	58	137	26	26	52	105	84	189

TABLE No. XVII.

COMPARISON OF DEATHS FROM ALL CAUSES, AND FROM SPECIFIED AND CONTAGIOUS DISEASES FOR TWENTY-SEVEN YEARS, FROM 1877 TO 1903, INCLUSIVE.

YEARS.	Population.	Measles.	Scarlet Fever	Typhoid Fever.	Croup.	Diphtheria and Pseudo-Membranous Croup.	Whooping-Cough.	Dysentery.	Cholera Infantum.	Children Under 5 Yrs.	Total Mortality. All Causes.
1877	311,275	161	597	235	157	455	297	52	616	4,584	7,910
1878	318,182	11	141	176	149	303	63	41	343	3,372	6,733
1879	325,139	43	367	166	186	298	80	60	475	3,385	7,618
1880	332,313	12	400	196	173	293	148	57	503	3,602	8,043
1881	339,649	162	215	197	242	639	93	56	558	3,919	8,116
1882	347,142	71	179	165	122	707	43	62	390	3,755	8,923
1883	354,832	130	334	126	201	591	59	52	473	4,062	9,380
1884	362,668	228	104	151	127	343	120	43	496	3,643	8,293
1885	370,696	16	68	155	148	252	63	60	498	3,228	8,153
1886	378,903	201	32	150	128	190	91	84	485	3,565	8,339
1887	387,300	85	36	156	153	149	98	137	567	3,477	8,372
1888	395,899	176	44	161	98	118	112	167	654	3,881	8,936
1889	404,498	11	71	191	53	155	54	156	572	3,505	8,703
1890	413,671	248	42	247	45	274	100	212	507	4,117	10,198
1891	426,917	16	128	150	44	350	103	118	531	3,910	10,073
1892	440,163	120	258	193	47	381	32	109	661	4,443	10.582
1893	453,409	39	36	224	25	185	60	62	444	3,604	9,554
1894	466,655	3	85	222	33	198	112	72	440	3,761	9,486
1895	479,907	68	59	173	45	265	68	70	510	4,026	10,301
1896	493,147	27	31	188	32	249	87	82	412	3,728	9,919
1897	506,398	16	53	189	13	347	42	57	401	3,510	9,329
1898	541,000	48	46	189	50	362	64	82	386	3,939	10,385
1899	541,000	5	24	153	.....	312	19	.....	.....	3,319	10,152
1900	541,000	24	20	189	12	267	47	77	848	3,695	10,700
1901	518,000	3	11	141	7	164	63	49	726	3,391	10,479
1902	525,000	41	37	220	9	121	95	78	695	3,327	10,253
1903	533,000	77	84	189	8	152	64	40	550	3,102	10,141

Financial Statement.

Original appropriation, salaries $57,836 00

EXPENDITURES.

Salaries to December 1, 1903:

Commissioner of Health, James Bosley, M.D....	$3,500 04	
Asst. " " C. Hampson Jones, M.D.	2,000 04	
Secretary, J. W. M. Kiger.....	1,500 00	
Assistant Secretary, Arthur D. Thompson.....	1,080 00	
Permit Clerk, Harry C. Andrews.....	999 96	
Registrar's Clerk, John H. Uhlenberg.....	900 00	
Laboratory Clerk, John A. Campbell.....	900 00	
Index Clerk, George C. Wedderburn	900 00	
" Charles A. Wall, Jr.....	900 00	
Nuisance Clerk, Francis X. Jenkins.....	900 00	
Insp. of Throats, { Allan W. Smith, M.D., 6 mos.	399 96	
Insp. of Throats, { Dr. W. P. Stubbs, 6 mos.	399 96	
Medical Examiner, Dr. N. G. Keirle.....	1,500 00	
Assistant Medical Examiner, Dr. B. P. Muse.....	499 92	
Inspector of Bakeries, Henry J. Hahn.....	900 00	
Inspector of Dairies, George F. Schultz.....	900 00	
Driver of Funeral Wagon, Aug. Rittmiller.....	720 00	
" " " H. M. North.....	720 00	
Disinfector, Thomas E. Morse.....	799 92	
" George W. Phillips.....	799 92	
Insp. Plumbing and Drainage, Jos. C. Mitchell..	1,200 00	
Asst. Insp. " " Geo R. Minnick.	900 00	
" " " C. H. Inderrieden.	900 00	
Inspector of Drains, Francis A. Ebberts.....	900 00	
Superintendent of Morgue, Patrick R. Glynn...	900 00	
Maker of Disinfectants, Wm. E. Woodall	799 92	
Commissioner's Clerk, Eleazer Goldberg.....	799 92	
Chemist, Gustav W. Lehmann.....	1,500 00	
Bacteriologist, Wm. Royal Stokes, M.D.	1,500 00	
Inspector of Food, Wm. B. Roth.....	900 00	
" " Charles Knell.....	900 00	
" " Herbert G. Wilson	900 00	
" " Charles A. Lerian, 11 mos ...	825 00	
" " Charles M. Brodwater.....	900 00	
Laboratory Asst., { R. deM. Taveau, 3 mos.....	105 00	
Laboratory Asst., { John Johns, 9 mos..	315 00	
Amounts carried forward.....	$35,464 56	$57,836 00

Amounts brought forward	$35,464	56	$57,836 00
Laboratory Assistant, John B. Weilage	180	00	
" " George Karl	180	00	
" " Grover Benser	192	00	
Messenger, J. Chas. Roemer, 4 mos., 16 days	54	19	
Messenger, Leonard Campbell, 4 mos., 15 days	53	81	
" James Bachen, 3 months	36	00	
Health Warden, 1st Ward, Dr. J. W. Williams	900	00	
" " 2d " Dr. C. M. Schulte	900	00	
" " 3d " Dr. J. A. Schulte	900	00	
" " 4th " Dr. Thos. Sudler	900	00	
" " 5th " Dr. F. A. Sauer	900	00	
" " 6th " Dr. A. C. Hearn	900	00	
" " 7th " Dr. Alex. S. Gage	900	00	
" " 8th " Dr. J. Wm. France	900	00	
" " 9th " Dr. H. Y. Westbrook	900	00	
" " 10th " Dr. John F. Hempel	900	00	
" " 11th " Dr. Claude VanBibber	900	00	
" " 12th " Dr. T. L. Richardson	900	00	
" " 13th " Dr. D. S. Williams	900	00	
" " 14th " Dr. Arthur G. Barrett	900	00	
" " 15th " Dr. Jas. L. Ridgely	900	00	
" " 16th " Dr. M. K. Warner	900	00	
" " 17th " Dr. Howard D. Lewis	900	00	
" " 18th " Dr. Robert A. Warner	900	00	
" " 19th " Dr. Marshall G. Smith	900	00	
" " 20th " Dr. Henry J. Hahn	900	00	
" " 21st " Dr. A. D. Driscoll	900	00	
" " 22d " Dr. A. T. Chambers	900	00	
" " 23d " Dr. H. Lee Franks	900	00	
" " 24th " Dr. L. J. Turlington	900	00	
Total expenditures			$57,760 56
Surplus of credit			$75 44
Balance to surplus, 1903			75 44
Original appropriation, expenses			$13,504 00
Transferred from Contingent Fund			8,488 91
Total credit			$21,992 91

EXPENDITURES.

Antitoxin	$2,559	80	
Fumigation	587	00	
Car fare	750	00	
Advertising	63	79	
Subscriptions to journals, etc	45	30	
Coffins for pauper dead	164	10	
Miscellaneous expenditures	1,204	55	
Rent 315 North street, Detention house	360	00	
Publishing annual report	2,224	55	
Ice and incidentals for Morgue	514	78	
Laboratory supplies	763	61	
Disinfectants	841	84	
Vaccine virus	1,000	00	
Digging graves	20	00	
Postage	1,115	63	
Livery and hiring	2,105	56	
Care of city patients	37	52	
Care of small-pox patients and suspects	7,634	88	
Total expenditures			$21,992 91

QUARANTINE.

Original appropriation, salaries		$11,105 00

EXPENDITURES.

Salaries to December 1, 1903:		
Ass't Com. of Health, Dr. Sydney O. Heiskell...	$3,000 00	
Assistant Resident Physician, Dr. T. W. Clarke..	1,825 00	
Captain, tugboat Hygeia, James C. Evans	780 00	
Engineer, John Crawford	720 00	
" John Kellner	600 00	
Mate, Hygeia, 7 months, Charles C. Chambers..	350 00	
" " 5 " W. T. Green	250 00	
Fireman, " Bernard McMahon	600 00	
" " Thomas Gilden	600 00	
Messenger, George M. Streeper	600 00	
Gardener, John L. Matthu	600 00	
Nurse and porter, 4 mos. 12 days, F. Hammill...	219 35	
" " " 2 " 19 " Peter Burns...	130 65	
" " " 5 " M. T. Armacost	250 00	
Laborer, John Sloan	60 00	
Cook, 2 months, Sarah Allen	40 00	
" 5 " Sarah Smith	100 00	
" 5 " Sarah Coulter	100 00	
Laundress, Annie Potter	180 00	
Extra nurse, Susan Barber	30 00	
" " Lucretia Nicholson	20 00	
Extra cook, Laura Dobson	25 00	
Extra nurse, Philip Forrest	21 00	
Total expenditures		11,101 000
Surplus of credit		$4 00
Balance to surplus, 1903		4 00
Original appropriation, expenses		$5,850 00
Curtis Bay Ice Co., refund paid in error		4 20
Totals credits		$5,854 20

EXPENDITURES.

Provisions	$1,346 89	
Groceries	669 83	
Ice	54 07	
Coal for "Hygeia" and household use	1,282 31	
New flags	20 00	
Subscriptions to newspapers	13 00	
Car fare	30 00	
Clothing for small-pox patient	8 15	
Sundry household bills	218 10	
Repairs to and supplies for "Hygeia"	1,315 64	
Farm implements, fertilizer, seeds, etc	144 35	
Fumigation	26 25	
Insurance on "Hygeia"	75 00	
Horse feed	296 64	
Drugs	58 60	
Repairs to launch	71 42	
Gasoline for launch and pumping engine	223 95	
Total expenditures		$5,854 20

QUARANTINE RECEIPTS, 1903.

Tonnage Tax.

January	$1,132 50	
February	980 69	
March	1,194 96	
April	1,180 22	
May	1,580 82	
June	1,716 46	
July	1,813 76	
August	1,549 25	
September	1,428 05	
October	1,307 22	
November	1,262 93	
December	993 15	
		$16,140 01

HEALTH DEPARTMENT—REVENUE.

Received for birth and death transcripts during year 1903.	$227 00
Balance paid into the city	227 00

BARRACKS AT QUARANTINE A—VI (24).

Original appropriation, transferred from Conting't Fund.	$7,195 50

EXPENDITURES.

Advertising for proposals	$ 44 85	
Blue prints	5 72	
Insley & Redden, contractors, on acct. contract.	5,000 00	
Total expenditures		5,050 57
Surplus of credit		$2,144 93
Balance carried forward to 1904		2,144 93

R. J. Biggs & Co.

Amount paid for wood lost from boat while quarantined for small-pox	$85 62

REPORT OF INSPECTIONS OF NUISANCES MADE AND ORDERED ABATED BY SANITARY INSPECTORS.

Number of Alleys to be cleaned	436
" " " repaired	635
" " " paved	83
" Premises to be cleaned	229
" Vacant lots to be drained, filled and cleaned	130
" Manure pits to be constructed	54
" " " reconstructed and repaired	47
" " " cleaned	70
" Drain-pipes to be reconstructed and repaired	171
" " " cleaned	22
" " " laid	1
" Defective plumbing ordered reconstructed and repaired	99
" Yards to be cleaned	1,351
" " " drained	71
" " " repaired	144
" " " paved	795
" Privies inspected and ordered cleaned	26,550
" " to be reconstructed	262
" " " ventilated	33
" Water-closets to be repaired and ventilated	87
" Excavating apparatuses inspected	2
" Cellars to be drained and filled	553
" " " cleaned	472
" Slaughter-houses inspected	1
" Stables to be reconstructed and cleaned	56
" Water-pipes and hydrants to be repaired	285
" Gutters to be repaired	191
" Rain spouts to be reconstructed	53
" Grass and weeds to be removed from gutters	295
" Ice-ponds examined and permits granted	3
" Tenements ordered cleaned and whitewashed	10
" Samples of water collected for analysis	44
" Sweat-shops examined	5
" Complaints examined and no nuisance found to exist	253
" Miscellaneous and extra examinations made	28,884
" Bacteriological cultures made	130
" Schools examined	75
" Legals proceedings instituted for non-compliance with notices	77

CONTAGIOUS DISEASES INSPECTED.

Number of	Cases of	Diphtheria	1,096
"	"	Scarlatina	1,082
"	"	Membranous croup	77
"	"	Whooping cough	183
"	"	Mumps	218
"	"	Chicken-pox	326
"	"	Tyhoid fever	615
"	"	Small-pox	5
"	"	Measles	2,132
"	"	Tuberculosis	4
"	"	Vaccinations	11,566
"	"	Visits to vaccinate	5,495
"	"	Examinations of vaccination	14,836
"	"	School certificates issued	7,883
"	"	Police station calls	287
"	"	Units of diphtheria antitoxin injected	250,000

REPORT

—OF THE—

Bacteriological Laboratory.

REPORT.

BALTIMORE, January 1, 1904.

DR. JAMES BOSLEY,

Commissioner of Health.

DEAR SIR: I hereby respectfully submit my report of the work performed in the Bacteriological Laboratory of the Sub-Department of Health for the year ending December 31, 1903.

BACTERIOLOGICAL EXAMINATION OF THE WATER SUPPLY.

The city water has been repeatedly examined, together with a number of wells and springs. These tests consist in the numerical estimation of the bacteria present in one cubic centimeter of water, and the tests for the presence of the colon bacillus or intestinal germ. Table No. 1, which follows, will show the work in detail.

USE OF ANTITOXIN IN THE TREATMENT OF DIPHTHERIA.

During the past year the Department has furnished antitoxin for the treatment of diphtheria in 550 cases. There were fifty-three deaths, making a fatality of 9.6 per cent. This is a slight decrease over last year, when the fatality was 10.7 per cent. The Department uses 2,000 units, repeated every six hours, until improvement takes place. In severe cases an initial dose of 3,000 units is often used. In 237 cases the diphtheria bacillus was found, and the number of deaths was 24, or a fatality of 10.1 per cent. This is a very good record in verified cases, and it is unfortunate that many physicians will use Department antitoxin and will not send in cultures. The outfits are always sent with the antitoxin, and should always be returned in order to arrive at correct conclusions.

Many physicians will not do this, and we cannot refuse to issue the antitoxin, since it might decrease the chances of the patient's recovery.

The fatality in laryngeal diphtheria was 24 per cent., and before the use of antitoxin these cases were almost always fatal. The fatality in nasal diphtheria from fifty-three cases was 18 per cent.

Striking results have been accomplished in preventing the spread of diphtheria. Two hundred and thirty-seven children exposed to diphtheria in infected houses were immunized by the use of 1,000 units of antitoxin, and not a child developed diphtheria. If these children had not been protected with antitoxin many of them would have developed the disease.

REPORT OF THE THROAT INSPECTOR.

The report of the Throat Inspector shows that the work in this Department has increased, and it also contains some interesting statistics concerning the reinfection of houses with diphtheria and scarlet fever. It shows a very small percentage of reinfections after disinfection, and emphasizes the importance of disinfection of houses and inspection of the throats in infected houses. You are respectfully referred to this interesting report for the further details.

RECOMMENDATIONS.

First. In order to make the work of the laboratory more effective I would respectfully request that the circulars of information prepared last year be sent to all physicians in the city.

Second. That the division be furnished with a new cabinet for preserving the records.

Respectfully submitted,

WM. ROYAL STOKES, M.D.,
Bacteriologist.

TABLE No. 1.

Tap, Stream or Well.	Date.	Colonies Per c.c.		Colon Bacillus.	Condition.
		Aerobic.	Anaerobic		
217 Mt. Royal avenue, tap	Jan. 23	40	11	Negative in 1 and 50 c.c.	Good
231 Hickory avenue, tap	Feb. 14	10	0	Negative in 1 and 50 c.c.	Good
Well, Captain Shirley	Mch. 6	6000	300	Present in 1 and 50 c.c.	Bad
Tap, Mrs. M. A. Bond, 234 Union avenue	Mch. 17	200	10	Present in 50 c c.	Bad
Spring, Dr. C. Hampson Jones	Mch. 18	30	2	Negative B enteritidis in 50 c.c.	Good
Ice, Dr. C. Hampson Jones	April 1	25	0	Negative in 1 and 50 c.c	Good
Well, Bradford avenue and Liberty road	April 6	2500	300	Present in 1 and 50 c.c.	Bad
Specimen, Dr. C. Hampson Jones	May 26	.....	.....	Negative B enteritidis in 1 c.c.	Good
Tap, 112 Montford avenue	May 19	360	212	Negative in 1 and 50 c c.	Good
2500 W. North avenue, well	May 20	672	0	Present in 50 c.c.	Bad
Specimen, Dr. C. Hampson Jones	May 26	.....	.....	Present in 1 c.c.	Bad
Tap. Martenet, Ridgewood and Granada avenue, West Arlington	June 6	1000	2400	Present in 1 and 50 c.c.	Bad
Laboratory tap	June 9	2820	40	Negative in 1 and 50 c.c.	Fair
Laboratory filter	June 9	240	12	Negative in 1 and 50 c.c.	Good
Spring, Harlem avenue extended	June 10	230	15	Negative in 1 and 50 c.c.	Good
Well, 401 Falls road	June 18	3000	600	Present in 1 and 50 c.c.	Bad
Tap, S. A. Weaver, 2105 Federal street	June 24	25	6	Negative in 1 and 50 c.c.	Good
House of Refuge	July 6	.....	.....	Present in 50 c.c.	Bad
Milk, Wise Bros., Factory, 132 W. Fayette st.	July 20	4560000	240	Present in $\frac{1}{1000}$ c.c.	Bad
City water, Wise Bros., Factory	July 20	406	6	Negative in 1 and 50 c.c.	Good
Ice, Wise Bros., Factory	July 20	1800	480	Negative in 1 and 50 c.c.	Fair
Ice, from farm	July 21	6000	840	Present in 1 and 50 c.c.	Bad
Water from well on farm	July 21	5000	600	Present in 1 and 50 c.c.	Bad

TABLE No. 1—Continued.

Tap, Stream or Well.	Date.	Colonies Per c. c. Aerobic.	Colonies Per c. c. Anaerobic	Colon Bacillus.	Condition.
Kitchen spigot, 1625 Edmondson avenue....	July 21	252	60	Negative in 1 and 50 c.c.	Good
Bath room spigot, 1625 Edmondson avenue..	July 21	90	10	Negative in 1 and 50 c.c.	Good
Laboratory tap.....	July 22	240	148	Negative in 1 and 50 c.c.	Good
Laboratory filter, new cylinder for three weeks.....	July 22	1500	2	Negative in 1 and 50 c.c.	Fair, but great increase over city water.
Tap, 413 New street.....	July 22	Liquefied	130	Negative in 1 and 50 c.c.	Good
Well, 226 Old York road.....	July 22	420	10	Present in 1 and 50 c.c.	Bad
Mr. Staum, artesian well.....	Aug. 12	.....	.....	Negative in 1 and 50 c.c.	Good
Water, Hyde.....	Sept. 26	.....	.....	Not present in 1 and 50 c.c.	Good
Water, Browning.....	Sept. 26	.....	.....	Negative in 1 and 50 c.c.	Good
Well, W. S. Whitely, Gilmore lane, near York road.....	Oct. 20	2500	500	Present in 1 and 50 c.c.	Bad
Well, Mrs. Shipley, Park Heights and First avenue.....	Oct. 20	2500	500	Present in 1 and 50 c.c.	Bad
City water, Harlan.....	Oct. 27	120	5	Negative in 1 and 50 c.c.	Good
Tap, Hotel Sherwood, 212 East Monument street.....	Oct. 27	360	72	Present in 50 c.c.	Bad
Hotel Preston, Guilford avenue and Preston streets.....	Oct. 27	10	3	Present in 50 c.c.	Bad
Tap, Mrs. R. C. Wilson, 1023 N. Calvert st...	Oct. 27	1200	60	Negative in 1 and 50 c.c.	Fair
Tap, Mrs. Dora Baer, 1041 Guilford avenue.	Oct. 27	1050	120	Not present in 1 and 50 c.c.	Fair
Tap, W. T. Dixon, 1224 Madison avenue	Nov. 23	2400	132	Negative in 1 and 50 c.c.	Fair

TABLE No. 1*a*—MILK.

BACTERIOLOGICAL EXAMINATION OF MILK.

TAP, STREAM OR WELL.	Date.	Colonies Per c. c.		Colon Bacillus.	Condition.
		Aerobic.	Anaerobic		
Wise Bros.' factory	July 20	4560000	240	Present in $\frac{1}{1000}$ c.c.	Bad
1139 McElderry street	Aug. 14	48000	.....	Present in $\frac{1}{1000}$ c.c.	Bad
1127 Low street	Aug. 17	9600000	.....	Present in $\frac{1}{1000}$ c.c.	Bad
922 Ashland avenue	Aug. 17	4800000	.....	Negative in $\frac{1}{1000}$ c.c.	Fair
Stable of Jacob Brenner	Aug. 17	360000	.....	Present in $\frac{1}{1000}$ c.c.	Bad
From store, 916 East Fayette street	Aug. 17	4680000	.....	Present in $\frac{1}{1000}$ c.c.	Bad
Wagon on Eden street	Aug. 17	3000000	.....	Present in $\frac{1}{1000}$ c.c.	Bad

SUMMARY OF TABLE No. 1.

Table No. 1 shows that seven wells were examined and all were bad. This demonstrates the continued pollution of the drinking wells by the seepage from the cess-pits. The city water was examined as it flows from the laboratory tap and the taps in the various wards in twenty-seven instances, and the colon bacillus, or bacillus coli, a proof of intestinal pollution was found eight times. The average number of ærobic bacteria present in twenty samples of tap water was 649.7, and the average anærobic bacteria was 171.9.

Table No. 1 shows that in seven samples of city milk the colon bacillus was present in six instances in 1.1000 of a cubic centimeter of milk. The average number of bacteria in seven samples was 3,864,000 bacteria per cubic centimeter. This far exceeds Parks' maximum requirement of 1,000,000 bacteria for the general milk supply of any large city.

TABLE No. 2.

EXAMINATIONS OF SPECIMENS TO DETERMINE THE PRESENCE OF DISEASE.

Diphtheria, positive cultures	683
" negative cultures	1,875
" suspicious cultures	23
" unsatisfactory cultures	24
Diphtheria—Total cultures	2,605
Diphtheria—Positive cultures of school children's throats	
" negative cultures of school children's throats	
" suspicious cultures of school children's throats	
Diphtheria—Total culture of school children's throats	
Diphtheria—Positive cultures examined by Throat Inspector	174
Negative cultures examined by Throat Inspector	3,601
Diphtheria—Total cultures examined by Throat Inspector	3,775
Tuberculosis—Positive results	448
" negative results	808
" suspicious results	3
" unsatisfactory results	2
Tuberculosis—Total results	1,261
Typhoid fever—Positive reactions	434
" negative reactions	708
" suspicious reactions	88
" unsatisfactory reactions	12
Typhoid fever—Total reactions	1,242
Malaria—Positive results	4
" negative results	253
" unsatisfactory results	15
Malaria—Total results	272
Antitoxin—Units, supplied in indigent cases	2,427,000
" cases treated by Health Department	1,270
Vaccine virus—Tubes supplied by Health Department	27,090
Water—Complete examinations made	40
Examinations—Miscellaneous	75
Milk examinations	7

TABLE No. 2A.

SHOWING THE TOTAL NUMBER OF EXAMINATIONS FOR PHYSICIANS DURING THE PAST EIGHT YEARS.

Examinations	for diphtheria	15,686
"	of school children	5,816
"	for tuberculosis	7,526
"	for typhoid fever	5,796
"	of malaria	583
"	of miscellaneous specimens	247
"	made by Throat Inspector	17,993
Total		53,647

TABLE No. 3.

CASES OF DIPHTHERIA TREATED WITH ANTITOXIN FURNISHED BY THE HEALTH DEPARTMENT FROM JANUARY 1, 1903, TO DECEMBER 31, 1903.

Cases.	Deaths.	Mortality.	Extent of Membrane.				Complications.					Cases Immunized.		
			Tonsils.	Tonsils and Pharynx.	Nasal.	Larynx.	Broncho-Pneumonia.	Nephritis.	Sepsis.	Paralysis.	Cardiac Paralysis.	Total.	Successful.	Diphtheria Developed.
550	53	9.6	321	163	53	73	8	15	4	10	8	237	237	0

Cases in which diphtheria bacilli were found	237	Percentage	18
Deaths resulting	24	Cases of laryngeal diphtheria	89
Percentage of mortality	10.1	Deaths resulting	22
Deaths from nasal diphtheria	10	Percentage of mortality	24

Mortality After Use of Antitoxin According to Duration of Disease at Time of Injection.	First day.	Second day.	Third day.	Fourth day.	Fifth day.	Sixth day.	Seventh day	Eighth day.	Tenth day.	2 Weeks.
Cases	277	226	107	59	25	9	18	.....	1	3
Deaths	11	23	5	6	2	0	3	.....	0	2
Percentage	.3	10.1	4 6	10.3	.8	.....	16.8	.....	.....	.66

Mortality in cases not treated with antitoxin (Welch) ..... 42 1 per cent.
Average mortality in Baltimore for four years (1894, 1895, 1896, 1897) prior to the use of antitoxin 55.18 per cent.

TABLE No. 3a.

CASES OF DIPHTHERIA TREATED WITH ANTITOXIN FURNISHED BY THE HEALTH DEPARTMENT FROM JANUARY 1, 1898, TO DECEMBER 31, 1902.

Cases.	Deaths.	Mortality.	Extent of Membrane.				Complications.					Cases Immunized.		
			Tonsils.	Tonsils and Pharynx.	Nasal.	Larynx.	Broncho-Pneumonia.	Nephritis.	Sepsis.	Paralysis.	Cardiac Paralysis.	Total.	Successful.	Diphtheria Developed.
2196	218	9.9	5028	667	184	347	21	27	25	45	54	1151	1145	6

Cases in which diphtheria bacilli were found..... 1204
Deaths resulting..... 100
Percentage of mortality..... 8.3

Cases of laryngeal diphtheria..... 347
Deaths resulting..... 100
Percentage of mortality..... 28.8

Mortality After Use of Antitoxin According to Duration of Disease at Time of Injection.	First day.	Second day.	Third day.	Fourth day.	Fifth day.	Sixth day.	Seventh day	Eighth day.	Tenth day.	Unknown.
Cases	611	692	354	143	67	19	42	9	11	13
Deaths	30	50	35	22	14	7	10	3	6	3
Percentage	4.9	7.22	9.88	15.3	20.8	36.8	23.7	33.3	54.5	23

Mortality in cases not treated with antitoxin (Welsh)..... 42.1 per cent.
Average mortality in Baltimore for four years (1894, 1895, 1896, 1897) prior to the use of antitoxin 55 18 per cent.

Table No. 3*a* gives the results of antitoxin since 1898, and contains some very encouraging figures. In 2,196 cases considered diphtheria by the physicians only 218 died when treated with antitoxin, giving a fatality of 9.9 per cent. In 1,204 cases the diphtheria bacillus was found, and only 100 died, a fatality of 8.3 per cent. It is unfortunate that in 994 cases no cultures were taken, as the statistics are not as accurate on this account. The comparatively small fatality in laryngeal cases and the increasing death rate as the injection of antitoxin is delayed is also shown in the table.

1,151 children in infected houses were immunized with 1,000 units each of antitoxin, and only six developed diphtheria. Several of these only received 500 units, and this dose is not always protective.

When the above figures are compared with the previous fatality of 55 per cent. in Baltimore before the use of antitoxin, and to Welch's figures of 42.1 per cent. the practical results in the saving of human life are to say the least gratifying. Not only have many lives been saved, but the persistent decrease in the cases of diphtheria treated and reported shows that the spread of the disease has been limited, partially by this work.

Report of the Chemist.

REPORT.

BALTIMORE, January —, 1904.

DR. JAMES BOSLEY, *Commissioner of Health:*

DEAR SIR—I have the honor to submit to you my report upon the Chemical Laboratory of the Health Department for the year ending December 31, 1903.

I.

MILK.

1. *Work Accomplished.*

The total milk examinations for the year 1903, January 1 to December 31, amounted to 39,506 lots, aggregating 2,158,496 gallons (see Table No. 1) as against 1,770,299 gallons for 1902, and 1,520,312 gallons for 1901.

It shows that the two milk inspectors again increased the total amount of milk examinations by nearly 400,000 gallons. The cause for this increase is partly due to efficiency of the inspectors, whom you were good enough to retain in your service, partly to certain changes in the inspection of milk, which I inaugurated early in the year. It takes months before a new man is able to master his duties intelligently, and at the same time quickly, and I am exceedingly grateful to you that you spared me the rather unpleasant task—the time and labor connected with it—of breaking in new and inexperienced men.

As to the changes made in examining milk, I beg to say that formerly, after the examination and lactometer reading of every can of milk at the railroad stations, a blank was filled out showing the number of gallons comprising each lot,

the name of the shipper and where shipped from, the date and railroad station where received, the specific gravity and condition of the milk. All this took time, and provided the inspection proved the milk to be above the standard, pure and rich, the blank, after delivery to the laboratory, was of no further use. It did not convey any information which could be used as a matter of record. Early in January, 1903, the making out of these blanks for milk which had passed satisfactory examination was omitted, and blanks are only filled out in detail when milk has been condemned and spilled, in which case the blanks, together with a sample of the milk to be analyzed, were brought to the laboratory. The inspectors, however, keep a correct account of the total number of lots and gallons examined at the depot or on the street each day, condensed on one daily blank, and delivered to me for record.

The total consumption of milk for the year was about the same as for the previous year (1902). The wholesale price of milk was considerably higher, due to a general scarcity of milk caused by higher prices of feedstuff, and, perhaps, a reduced production. The average price of milk in 5-gallon cans at the railroad stations is from 60 to 80 cents per 5-gallon can, but during 1903 the prices have been considerably higher. During last summer at times milk brought as much as from $1.10 to $1.25 per 5-gallon can at the several depots.

2. *Quality of Milk.*

The total amount condemned and spilled by the inspectors during 1903 amounted to 501 lots, aggregating 2,741 gallons (see Table No. 1), as against 557 lots with 2,944 gallons for the previous year. In my report for the year 1902 I placed the total consumption of milk for Baltimore roughly at 7,500,000 gallons. Based upon a closer investigation during 1903, I find that this figure was rather low, and that the consumption may be safely placed at between 8,000,000 and 9,000,000 gallons. However, considering that in round figures 25 per

cent. of all the milk consumed passed examination, and applying the same ratio upon the remaining 75 per cent. of the milk, we find that only a little over $\frac{1}{10}$ of 1 per cent. was condemned, and that $99\frac{9}{10}$ per cent. constituted good, unadulterated milk.

Fully realizing the vital importance of a pure and unadulterated milk supply and its relation to health, and especially to the mortality of infants, your chemist has entered more fully upon this subject, and begs to present some data which may be of interest.

Independent of the many comparison samples of milk which are subjected to analysis during the year for the purpose of assisting the inspectors in their daily work, the inspectors during the first eight months of 1903 took frequent samples of milk which had passed satisfactory examination at the railroad stations. The samples were carefully analyzed and are tabulated in Table No. 2. The samples represent the six railroads over which milk reaches the city, and were taken at random and indiscriminately. The table will speak for itself as to the quality of the milk. The average of the forty-seven analyses—specific gravity, 1.0305; total solids, 14.298, and fat, 5.203—offers certainly no cause for complaint as to the quality of the milk from the shippers.

In order to find whether the dairymen and milk dealers throughout the city delivered to their customers the same article as received from the several depots, without previous watering or otherwise manipulating, the inspectors during their rounds on the streets brought to the laboratory during the same period of time samples taken from the churns of the dealers. By glancing over the figures tabulated in Table No. 3 we find the results of eighty-three of such analyses with an average of specific gravity, 1.0303; total solids, 13.805, and butter fat, 4.981. Compared with the average of the analyses from the depot samples there is but an insignificant difference in favor of the shippers, which difference would have been more than wiped out if I had left out about

a dozen analyses from Table No. 3, which were very close to, and, in some instances, below, the legal standard. As it stands, the investigation unquestionably proves that the dairymen of the City of Baltimore, with but a few exceptions, deliver to the public the milk precisely as received from the depots, which milk compared with the legal standard—12 per cent. of total solids and 3 per cent. of butter fat—averages in round figures about 20 per cent. more of total solids and 40 per cent. more of butter fat.

The above investigation dealt chiefly with the chemical analysis and the cleanliness of the milk, since a bacteriological analysis was outside of my province. However, the majority of the samples were examined microscopically for pus and as far as practicable for pathogenic germs (tubercle bacillus). In most all of the samples a few pus cells were present, but no tubercle bacillus could be located. The number of bacteria in one cubic centimeter of milk were not counted.

On the other hand, every one of the 130 samples was examined for the presence of preservatives (formaldehyde) and only in eleven of the 130 samples small quantities of formaldehyde was found to be present. No other preservatives could be traced.

Evidently the cause of the great mortality from intestinal diseases especially among infants in certain sections of the city cannot be placed at the doors of the shippers of milk or of the dairymen and responsible milk dealers. To gain further information upon this subject of mortality I was instructed to institute a series of investigations of a different character. This investigation will perhaps throw some light upon the subject. and has opened a new and wide field, while the facts gained are for want of time and the small force at my command, so far rather limited, they are, notwithstanding, quite interesting.

As stated, I received instructions to investigate during the summer of 1903 into the condition of the milk supply of the

Southeastern District of the city, where the mortality among infants, caused from intestinal diseases is abnormally high. These investigations included, if feasible, a canvass of private residences and tenement houses in order to learn something in reference to the quality and quantity of milk used, especially as pertaining to the feeding of infants.

SPECIAL INVESTIGATION SOUTHEAST BALTIMORE.

Tenement house, 8[illegible] S. Broadway—Number of children, barefooted, one infant, breast, no milk used, buy condensed milk, no milk in house, no sample; condition filthy.

Private house, 1632 Lancaster street—Three small children, one infant, breast, condensed milk, no sample; condition clean.

Small store, 804 S. Bond street—1 to 2 gallons of milk sold daily, sell mostly condensed milk; condition fair. Sample of milk—Specific gravity, 1.0290 per cent.; total solids, 11.09 per cent.; fat, 3.05 per cent.

Small store, 819 S. Bond street—About 1 gallon of milk sold daily; condition fair. Sample—Specific gravity, 1.0310 per cent.; total solids, 12.33 per cent.; fat, 3.60 per cent.

Small store, 1520 Thames street—1 gallon of milk or less sold daily; condition fair. Sample—Specific gravity, 1.0270 per cent.; total solids, 11.32 per cent.; fat, 3.60 per cent.

Potspring Dairy, 1613 Aliceanna street—Handle from 200 to 300 gallons of milk daily; condition clean. Sample—Specific gravity, 1.0280 per cent.; total solids, 11.64 per cent.; fat, 3.65 per cent.

Small store, 1303 Eastern avenue—Condition clean; small amount of milk sold. Sample—Specific gravity, 1.0290 per cent.; total solids, 12.79 per cent.; fat, 4.40 per cent.

Store, 1923 Eastern avenue—Condition fair; 2 to 3 gallons milk daily. Sample—Specific gravity, 1.0300 per cent.; total solids, 11.61 per cent.; fat, 3.20 per cent.

Great Eastern Dairy, 1836 Eastern avenue—Condition good; about 200 gallons milk daily. Sample—Specific gravity, 1.0300 per cent.; total solids, 11.36 per cent.; fat, 3.00 per cent.

Small store, 506 S Ann street—Condition fair; very little milk handled. Sample—Specific gravity, 1.0310 per cent.; total solids, 11.85 per cent.; fat, 3.20 per cent.

Small store, 1814 Lancaster street—Miserable place; filthy, but little milk handled. Sample—Specific gravity, 1.0200 per cent.; total solids, 6.66 per cent.; fat, 1.20 per cent.

Andryszk Dairy, 709 S. Ann street—Condition good; about 75 gallons of milk sold. Sample—Specific gravity, 1.0285 per cent.; total solids, 13.26 per cent.; fat, 5.05 per cent.

Makowiecky Dairy, 715 S. Regester street—Condition fair; 10 gallons milk daily. Sample—Specific gravity, 1.0250 per cent.; total solids, 10.58 per cent.; fat, 3.40 per cent.

Store, 204 S. Bond street—Conditions good; 1 gallon or less daily. Sample—Specific gravity, 1.0310 per cent.; total solids, 10.85 per cent.; fat, 2.20 per cent.

Store, 1414 Gough street—Condition fair; 1 to 1½ gallons daily. Sample—Specific gravity, 1.0280 per cent.; total solids, 10.62 per cent.; fat, 2.80 per cent.

Small store, southwest corner Gough and Spring streets—Condition filthy; small amount of milk sold; no sample.

Kaplan Dairy, 306 S. Eden street—Condition good; about 50 gallons milk handled daily. Sample—Specific gravity, 1.0310 per cent.; total solids, 10.53 per cent.; fat, 2.10 per cent.

Flax Dairy—211 S. Eden street—Condition fair; 10 gallons milk daily. Sample—Specific gravity, 1.0290 per cent.; total solids, 12.31 per cent.; fat, 4.00 per cent.

Milk Depot, 1404 E. Lombard street—Condition fair; 150 to 200 gallons handled daily. Sample—Specific gravity, 1.0270 per cent.; total solids, 10.61 per cent.; fat, 3.05 per cent.

Store, 2029 Canton avenue—Condition fair; 1 to 2 gallons daily. Sample—Specific gravity, 1.0280 per cent.; total solids, 12.06 per cent.; fat, 4.00 per cent.

Store, 2118 Canton avenue—Condition tolerable; 1 to 2 gallons daily. Sample—Specific gravity, 1.0290 per cent.; total solids, 12.16 per cent.; fat, 3.40 per cent.

Store, 2116 Canton avenue—Condition fair; about 2 gallons daily. Sample—Specific gravity, 1.0285 per cent.; total solids, 12.45 per cent.; fat, 4.20 per cent.

Store, 2110 Eastern avenue—Condition fair; 1½ gallons daily. Sample—Specific gravity, 1.0255 per cent.; total solids, 11.95 per cent.; fat, 3.60 per cent.

Store—410 S. High street—Condition filthy; 2 gallons daily. Sample—Specific gravity, 1.0250 per cent.; total solids, 11.10 per cent.; fat, 3.00 per cent.

Store, 456 S. Ann street—Condition good; 2 gallons milk daily. Sample—Specific gravity, 1.0310 per cent.; total solids, 12.80 per cent.; fat, 3.40 per cent.

Dairy, Shell road, Louis Plie—Condition good; 40 gallons daily. Sample—Specific gravity, 1.0295 per cent.; total solids, 12.92 per cent.; fat, 3.40 per cent.

Mehring Dairy, 15 Henderson street—Condition good; 20 gallons daily. Sample—Specific gravity, 1.0275 per cent.; total solids, 13.65 per cent.; fat, 4.60 per cent.

Store, 2000 Bank street—Condition fair; 6 gallons daily. Sample—Specific gravity, 1.0285 per cent.; total solids, 12.56 per cent.; fat, 3.80 per cent.

Dairy, 1720 E. Lombard street—Condition good; handle 50 gallons daily. Sample—Specific gravity, 1.0300 per cent.; total solids, 12.85 per cent.; fat, 4.20 per cent.

Store, 1302 Gough street—Condition fair; small amount. Sample—Specific gravity, 1.0295; total solids, 12.57 per cent.; fat, 3.80 per cent.

Private house, 216 S. Ann street—Condition fairly clean; infant, breast, no milk.

Private house, 422 S. Ann street—Condition filthy; no cellar; garbage; no information.

We will close the list here, though there has been some more work done, but the foregoing will fully illustrate existing conditions. We find that with but few exceptions, the sanitary conditions were fair and in most cases ice-boxes or refrigerators were kept for the storage of the milk in the stores and dairies. The quality of the milk, however, was very unsatisfactory and often below the legal standard. In almost every instance the hydrant had been called into service to stretch the quantity; from ten per cent. to fifty per cent. of water being added to make the business more profitable for the storekeeper. To what degree the addition of this water is responsible for the pollution of the milk is a matter of serious consideration. The stores and dairies handling larger quantities of milk, say over five gallons daily, generally purchase their supply at the several depots direct from the shippers; the smaller places get their daily supply, five gallons or less, from the milk wagons. Whether the milk sold in these stores is intended for the nourishment of infants is a matter of indifference to them. Whenever during this special investigation a regular milk wagon was noticed in the street, the driver was stopped and the milk examined by the inspector, but in not a single instance did the inspection prove unsatisfactory.

The investigation respecting the milk supply in private houses and tenements has been rather unsuccessful and disappointing; the mothers or other members of the family where we found small infants were not willing to volunteer any information, treated the inspector with suspicion and often refused to answer questions at all. They would not listen to polite explanation by the inspector, and told him that it was none of his business where they bought the milk; whether they nursed their baby themselves or fed it on store milk.

Frequently the inspector was informed that they did not buy any milk at all, but used condensed milk for the baby as

well as for themselves. This suggested the idea of investigating the condensed milk question, and we found that all the stores throughout the Southeastern District sold large quantities of condensed milk. The brand mostly sold is the Magnolia brand, which is the cheapest article in that line. Upon personal inquiry your chemist was informed that one single large grocery sold from thirty to forty dozen cans of Magnolia brand condensed milk daily, and I purchased a can for nine cents. We found the retail price is either eight, nine or ten cents per can; at one store two cans for fifteen cents.

ANALYSIS OF MAGNOLIA CONDENSED MILK. CAN PURCHASED IN JUNE, 1903, AT A SOUTH BROADWAY STORE FOR NINE CENTS.

June, 1903—water	30.75	per cent.
Total solids	69.25	"
	100.00	"
Specific gravity	1.27	
Butter fat	10.16	"
Proteids	6.92	"
Milk sugar	9.85	"
Cane sugar	40.90	"
Total sugar	50.75	"
Ash	1.71	"

Bacteriological Examination:

One cubic centimeter of condensed milk introduced into 500 cubic centimeters of sterile water and one cubic centimeter taken for plate cultures. Result: 1,087,000 colonies per one cubic centimeter of condensed milk. The pus bacillus was isolated from the plate cultures.

ANALYSIS OF MAGNOLIA BRAND CONDENSED MILK. CAN PURCHASED ON 3 CAROLINE STREET FOR 8 CENTS, NOVEMBER, 1903.

Water	26.80	per cent.
Total solids	73.20	"
	100.00	"
Specific gravity	1.32	"
Butter fat	9.88	"
Proteids	7.66	"
Milk sugar	10.45	"
Cane sugar	42.62	"
Total sugar	53.07	"
Ash	1.42	"

No bacteriological examination made.

ANALYSIS OF MAGNOLIA BRAND CONDENSED MILK. CAN BOUGHT ON NORTH GAY STREET FOR 10 CENTS, DECEMBER, 1903.

Water	24.81	per cent.
Total solids	75.19	"
	100.00	"
Specific gravity	1.32	"
Butter fat	8.10	"
Proteids	7.82	"
Milk sugar	12.90	"
Cane sugar	42.10	"
Total sugar	55.00	"
Ash	1.53	"

Bacteriological examination as above: 1 cubic centimeter of milk contained 252,000 bacteria.

Whilst it may be difficult to get any accurate data as to the actual consumption of condensed milk in Baltimore, yet based upon inquiries in that direction, we can put the yearly consumption at:

Magnolia brand,	40,000	cases,	4 dozen each.
Eagle brand,	6,300	"	4 "
Other brands,	6,000	"	4 "

The Magnolia brand is by far the cheapest article, and is used almost exclusively by the poorer classes. The above 40,000 cases with four dozen cans each, amount to 1,920,000 cans, which, taking it that three to four parts of water are mixed with the condensed milk, making about one-half gallon of fluid, would amount to 960,000 gallons for the year. The conditions pertaining to the preparation of this diluted condensed milk, the purity of the water added, the cleanliness of the vessels used, the place where it is kept, the protection from souring or contamination, are all questions of grave importance when we know that the bulk of the 960,000 gallons constitutes food for infants.

During the coming year this subject will be taken up again, and other brands of condensed milk will be analyzed.

3. *Impure and Adulterated Milk.*

Only 2,741 gallons of milk were condemned and spilled during 1903 (see Table No. 1), showing that the milk supply of Baltimore is at present in a very satisfactory condition. Absolute cleanliness of cans and vessels in which milk was received at the several depots and of the churns and measures of the milk wagons was strictly enforced. Preservatives and artificial coloring of milk were closely looked after, but very little trouble was experienced in that direction. As far as preservatives are concerned, especially during the summer months, formaldehyde is still used to a considerable extent. It is unquestionably the most efficient and at the same time the least harmful of all preservatives, because a very slight amount will be sufficient to keep milk sweet for several days. Since the presence of formaldehyde in small amounts can only be detected by chemical tests, which cannot well be performed by the inspectors, the Assistant Chemist at intervals accompanied the inspectors with the necessary apparatus to test the milk for formaldehyde at the several depots immediately upon arrival. By this means the habit of the shippers of adding this preservative to the milk has been pretty well broken up. During the next hot season these examinations will be extended to the wagons on the streets, when we will be able to stop the practice altogether.

The artificial coloring of milk with azodyes is almost a thing of the past, only two or three cases coming under our observation. In order to further guard against the introduction of disease germs into our milk supply, considerable work was done in another direction. The inspectors, whenever feasible, visited the dairy farms in the Annex and within the city limits, looking into the sanitary conditions of the place not only, but especially tracing the source of the water used for washing the milk cans, and, perhaps, in some instances for adulterating the milk. A sample of this water (spring, pump or well) was brought to the laboratory and subjected

to analysis. When found polluted the discontinuance of the use of such polluted water was strictly enforced.

At your request, the approximate amount of milk received at the six railroad stations daily, indicating the places of the respective shipments, have been tabulated (see Table No. 4).

II.

WATER.

1. *City Water Supply.*

As in my report for the year 1902, I can only say that Table No. 5 fully illustrates the condition of our water supply. The samples were taken from taps, not only at the laboratory, but all over the city. With only one or two exceptions, nitrites were found to be present in all samples analyzed, showing active decomposition of organic matter, indicating intestinal pollution.

2. *Pumps, Springs and Wells.*

Table 6 enumerates the analysis of water from pumps, wells and springs examined.

Since most of the pumps and wells, especially in the Annex, have been dealt with in previous years and closed when polluted, there was but little work left for 1903.

III.

MISCELLANEOUS WORK.

Among the large number of investigations of a micellaneous character were samples of sausage, meats, fish, flour, butter, oleomargarine, cakes, candies and various articles of food, disinfectants, paints, oils, rubber, etc.

In reference to sausage, I can only repeat what I stated in my last report (1902) that due to the untiring efforts of Mr. Charles Knell, colored sausage is a rare thing to be met at our markets or in our stores.

The whole number of analysis made at the chemical laboratory of the Health Department include:

Milk	415
Water—City water supply, pumps, wells and springs	143
Water—Cellars, ponds, cesspools	192
Sausage and meat	175
Coal	326
Miscellaneous	501
	1752

I am indebted to my assistant, Mr. John Johns, and to the inspectors, Messrs. Roth, Wilson and Knell, for their valuable assistance and the harmony in the performance of our duties.

Thanking you for your courteous treatment and kind feelings towards me, I remain,

Yours very respectfully,

G. W. LEHMANN,
Chemist Health Department.

TABLES.

TABLE No. 1.

Total Amount of Milk Examined and Spilled.

1903.	Examined.		Spilled.	
	Lots.	Gallons.	Lots.	Gallons
January	3,057	172,910	54	262
February	3,104	151,691	26	129
March	3,464	188,912	77	385
April	3,191	177,945	28	160
May	3,037	168,263	58	322
June	3,390	186,598	60	341
July	3,715	201,881	86	440
August	3,144	180,164	16	124
September	3,379	186,395	37	185
October	3,766	204,861	25	175
November	3,118	173,498	14	67
December	3,141	165,378	20	151
	39,506	2,158,496	501	2,741

TABLE No. 2.

COMPARISON ANALYSES OF MILK FROM SHIPPERS TO RAILROAD STATIONS.

1903.		Specific Gravity	Solids.	Fat.
January 12	Fulton Station—Ezra C. Brown, Westminster	1.0305	15.35	6.22
" 15	North Avenue Station—D. P. Hollingsworth, Falston Creamery	1.0320	14.02	4.80
" 15	North Avenue Station—D. P. Hollingsworth, Falston Creamery	1.0325	14.06	4.85
" 28	Calvert Station—L. M. Keizer, Ashland	1.0322	14.62	5.40
" 29	Hillen Station—C. J. Hilbert, New Windsor	1.0300	15.44	6.40
February 2	Fulton Station—R. Reuben Saylor, Union Bridge	1.0330	16.49	6.55
" 3	North Avenue Station—H. N. Baldwin, Baldwin Station	1.0320	16.42	6 80
" 4	Calvert Station—E. Hambleton, Lutherville	1.0320	14.32	5 05
" 5	Hillen Station—O. Hull, New Windsor	1.0315	13.65	4.60
" 6	Woodberry Station—C. Irvin, Graystone	1.0308	14.25	5.24
" 7	President Street Station—J Mitchell Perryman's	1.0323	15.65	6.05
" 14	President Street Station—J. Mitchell, Perryman's	1.0290	15.10	5.60
" 18	Hillen Station—Hanover Produce Co., Culverton.	1.0320	13.34	4.20
" 18	Hillen Station—Hanover Produce Co., Spurrier	1.0335	16.01	6.15
" 18	Fulton Station—Hanover Produce Co., Sinsheim	1.0300	12.84	4.24
" 26	Hillen Station Hanover Produce Co., Spurrier	1.0330	15.08	4.85
March 4	Calvert Station—F. R. Royston, Phœnix	1.0322	14.81	5.46
" 12	Hillen Station—L. B. Rohrbaugh, Glenville	1.0322	15.23	5.55
" 17	North Avenue Station—G. Seiler, Hyde Station	1.0300	14.84	5.45
" 20	Woodberry Station—G. Blakley, Graystone	1.0300	14.03	5.20
April 2	Hillen Station—Nathaniel Bay, Finksburg	1.0285	13.86	5.50
" 13	Camden Station—Highland Farm Dairy, Carrollton	1.0280	12.36	4.25
" 15	Calvert Station—N. H. Ensor, Glencoe	1.0310	15 81	6 50
" 21	North Avenue Station—Thomas Peirce, Long Green	1.0310	14.60	5.55
" 30	Hillen Station—E. E Stoner, Spring Mills	1.0320	13.78	4.60
May 18	Hillen Station—Wm. Epphart, Union Bridge	1.0290	13.31	4.95

TABLE No. 2—Concluded.

1903.		Specific Gravity.	Solids.	Fat.
May 20	Hillen Station—V. T. Caples, Glyndon	1.0270	14.10	6.05
June 11	Calvert Station—Walker Perdue, Monkton	1.0280	13.05	4.20
" 15	Hillen Station—Jos. J. Price, Westminster	1.0285	11.83	4.10
" 18	Hillen Station—E. D. Buckley, Green Ridge	1.0290	14.25	4 00
July 8	Calvert Station—Average sample from car	1.0295	14.44	4.10
" 9	Hillen Station—D. S. Danner, Porters	1.0290	13.95	3.95
" 9	Hillen Station—C. Clenson, Union Bridge	1.0285	14 00	5.40
" 13	Fulton Station—Average refrigerator car	1.0300	14.20	5.35
" 11	President Street Station—Perryman's, average	1.0300	14.62	5.80
" 14	North Avenue Station—Average sample, 20 cans	1.0305	15.92	5.95
August 13	Calvert Station—J. G. Lyttle, White Hall	1.0304	13.74	4.90
" 13	Calvert Station—J. E. Almont, White Hall	1.0295	13.70	5.05
" 13	Hillen Station—Thomas G. Boram	1.0290	13.75	5.20
" 25	North Avenue Station—Homewood Station, T. Price	1.0300	13.76	5.00
September 8	Camden Station—Sykesville, D. Shippley	1.0298	13.66	4.95
" 9	By electric cars from Ellicott City to Melrose Dairy	1.0305	14.00	5.10
" 9	" " " Bernheimer	1.0300	13.64	4.90
" 9	" " " Olive Dairy	1.0305	13.93	5.05
" 15	Hillen Station—Glenville, C. T. Myers	1.0308	13.72	4.80
" 22	Fulton Station—Medford, W. M. Englar	1.0300	14.30	5.45
" 28	President Street Station—Magnolia, Miss S. Sully	1.9305	14.18	5.25
	Averages—47 analyses	1.0305	14.298	5.203

TABLE No. 3.

Comparison Analyses of Milk from Milk-Wagon and Dairies.

1903.		Specific Gravity	Solids.	Fat.
January 12	Wagon—James R. Malone, 2671 Pennsylvania avenue	1.0304	14.89	5.86
" 20	" Magnolia Farm Dairy, Sheehan	1 0322	14.79	5.40
" 28	" Jersey Dairy Farm, Gallager	1.0300	15.45	6.50
" 29	" Gray Stone Dairy, A. G. Jones	1.0305	16.92	6.80
February 2	" J. W. Hartzell, 2025 Druid Hill avenue	1.0320	17.62	7.80
" 3	" Holmes & Waddington, 1422 Druid Hill avenue	1.0300	16.88	7.60
" 4	" John G. Zink, 1729 Light street	1.0325	12 71	3.60
" 5	" Wilson Farm Dairy, E. E Hoey	1.0305	12.94	4.20
" 6	" G. N. Wilson, Woodberry avenue	1.0320	15.18	4.10
" 6	Store—G. C. Lantz, 845 Bank street	1.0305	12.52	3.86
" 10	Wagon—New Freedom Farm Dairy, H. E. Smith	1.0320	14.14	5.05
" 16	" James R Malone, 2671 Pennsylvania avenue	1.0333	15.06	5 40
" 17	" No. 5, Pikesville Dairy	1.0320	15.22	5.80
" 18	" Jersey Dairy, John N. Stewart	1.0330	14.57	5.05
" 20	" Perryman's, J H Lovett	1.0312	13.88	4.85
" 25	" Rosewood Farm Dairy, M Rosenberg	1.0328	12.78	3.60
" 25	" Bell Farm Dairy, H. A. Albaugh	1.0344	14.44	4.65
March 4	Dairy—Gardner's, Robert street and Druid Hill avenue	1.0305	14 96	5.93
" 4	Store—Mrs. Draehler, Preston street and Homewood avenue	1.0320	13.43	4.20
" 4	" S. Kropman, 127 N. Exeter street	1.0325	15.88	6.25
" 5	Wagon—No. 5, Gardner's New Dairy	1.0320	12.34	4 00
" 9	" Rock Farm Dairy, G. F. Kraemer	1.0310	14 06	5.04
" 10	" Windsor Heights Farm Dairy, Frank B. Dorsey	1.0290	14.02	5.40
" 11	" Standard Dairy, Kaplan	1.0320	15.22	5.80
" 12	Dairy Lunch—Johnnie Hopwood, Baltimore street	1.0335	15.09	5.60
" 12	" " Johnnie Hopwood, Camden street	1.0300	14.06	5.20
" 16	Wagon—Bell Farm Dairy, O. B. Sloffer	1.0320	14.91	5.28

TABLE No. 3.—Continued.

COMPARISON ANALYSES OF MILK FROM MILK-WAGON AND DAIRIES.

1903.		Specific Gravity	Solids.	Fat.
March 18	Wagon—Brook Farm Dairy Co., H. R. Hardy	10.302	14.05	5.16
" 20	Dairy—Hampton Dairy, H. Williams	1 0300	14.03	5.20
" 20	Wagon—New Windsor Farm Dairy, Fred. B Buck	1.0306	12.83	4.10
" 24	" Alburton Farm Dairy, F. Hauseman	1.0330	15.71	6.10
April 1	" Lily Farm Dairy, Fred. Brand	1.0300	14.96	5.95
" 1	Store—L. Kropman, 127 N. Exeter street	1.0320	15.66	6.15
" 9	Wagon—Montford Dairy, Wm. Thomas	1.0294	13.03	4.60
" 11	Bottled milk—New Hygeia Dairy, Schier & Bro.	1.0355	15.61	5.50
" 13	Wagon—Milford Dairy Farm, Harwick	1.0265	12.21	4.20
" 14	" Western Maryland Dairy, J. D Baxter	1.0315	16.11	6.57
" 16	" to German Orphan Asylum, Crawther	1.0290	13 32	5.05
" 20	" Harford Dairy, H. E. Woods	1.0295	13 64	5 64
" 22	Store—227 Exeter street, L. Kropman	1.0290	14.70	6.04
" 23	Wagon—Northeastern Dairy, Jas. F. Klima	1.0300	13.51	5.10
" 27	" Bellview Dairy, Geo. E. Johnson	1.0270	13.68	6.95
" 29	" South Baltimore Dairy, George Albaugh	1.0305	13.55	4.80
May 4	" Frederick Farm Dairy, A. Pastorius	1.0290	14.70	6.00
" 6	" Rose Hill Dairy, G. A. Pruett	1.0295	14.36	4.29
" 6	" Crystal Farm Dairy, C. Shipley	1.0310	12.36	3.60
" 11	" Clover Dale Farm Dairy, A. McCann	1.0311	14.16	5.10
" 13	" Cedar Farm Dairy, J. A. Bauer	1.0310	15.45	6.20
" 14	Lunch room—J. Hopwood, Rohrbaugh, Glenville	1.0295	13.87	5 60
" 15	Wagon—Highland Avenue Dairy Farm, C. Winterling	1 0272	13.60	5.90
" 17	" Southeast Baltimore, E. Brauner	1.0285	11.22	3.20
" 22	" Willow Farm Dairy, J N. Wright	1.0282	13.15	4 90
" 25	" Hunter Farm Dairy, S. S. Arnold	1.0295	12 31	4.00
" 29	" J. N. Hoey, South Regester street	1.0270	12.16	4.15

May 29	Wagon—Henry Becker, Canton	1.0295	13.55	4.10
" 29	" J. Martin, Canton	1.0285	12.44	4.45
" 29	" New Hygeia Dairy, Schier & Bro.	1.0320	13.72	4.55
June 2	" Montebello Dairy, A. G. Wolf	1.0295	15 35	5.60
" 5	Lunch room—9 South Eutaw street, J. F. Klitch	1.0300	11 83	3.60
" 9	Wagon—M. S. Ochs, North Gay street	1 0290	12.25	3.95
" 12	" Gold Wreath Dairy, Ed. A. Glaser.	1.0294	12.80	4.60
" 16	" Lauraville, Baltimore county, J. M Erdman	1.0305	13.94	5.05
" 19	" 2514 Mosher street, Charles Cook	1.0295	13.75	5.10
" 19	" Walbrook Dairy, 1215 Lexington street	1.0295	12.67	4.20
" 19	" White Oak Dairy, J. C. Letzau	1.0305	12.98	4.25
" 22	" Shiloh Farm Dairy, N. Long	1.0280	12.54	4.40
July 1	" Brightside Farm Dairy, 1816 Barclay street	1.0320	13.18	4.25
" 7	" Montebello Dairy, Wm. Wolf	1.0300	12.95	4.60
" 21	Melrose Dairy, 2022 East Baltimore street	1.0280	13.32	5 05
" 21	Melrose Dairy, from wagon	1.0280	12.54	4.40
" 23	Wagon—J. H. Miller, Baltimore county	1.0285	11.83	4.10
" 23	" Annapolis road, John Kess	1.0279	12.19	4.20
" 24	" Willow Spring Dairy, S. P. Needles	1.0290	11.29	3.15
" 30	" M. Romboro, Bank street extended	1.0300	12 62	4.05
" 31	" Spring Lake Farm Dairy, E. H. Pletzer	1.0305	15 09	6.00
August 6	German Orphan Asylum	1.0265	10.72	3.20
" 7	Wagon—Riverside Farm Dairy, Edw. A. Grill	1.0295	12 31	4.10
" 13	" Fair View Farm Dairy, George Bartholome	1.0292	14.04	5.40
" 14	" Fred. Gerkins' Dairy, Garrison lane	1.0300	13.04	4.40
" 14	" Fred. Scheneigert. 196 Jefferson street	1.0295	13.28	4.70
" 15	" Fulton Dairy, Robert Clark	1.0295	13 09	4.55
" 23	" Owings Mills Farm Dairy, J. H. Disney	1.0295	13.75	5.10
" 29	" Mount Vernon Dairy, D. W. E. Bramble	1.0310	14.83	4.85
	Averages: 83 analyses	1.0303	13.805	4.981

TABLE No. 4.

Approximate Amounts of Milk from Shippers to Railroad Stations.

Stations.	Gallons.	
Calvert Station—		
Gladfelter	400	
Smyser	640	
Hanover Junction	180	
Larue	55	
Glenrock	320	
Shrewsbury	265	
New Freedom	285	
Freeland	105	
Bentley	200	
Walker's	530	
Parkton	440	
Graystone	485	
White Hall	650	
Bluemount	70	
Monkton	950	
Corbett	140	
Glencoe	765	
Sparks	290	
Phœnix	260	
Ashland	30	
Cockeysville	275	
Texas	20	
Timonium	95	
Sherwood	45	
Lake Station	55	
		7550
Hillen Station—		
Shippensburg (Pa.) Creamery	1000	
York Road and Culbertson Creameries	1000	
Porter's	50	
Carrollton	50	
Green Ridge	40	
Western Maryland Station	40	
Hoffman	90	
Miller	50	
Glenville	180	
Finksburg	140	
Lineboro	295	
Gwynnbrook	325	

Hillen Station—Continued. Stations.	Gallons.	
Westminster	70	
Linwood	110	
Avondale	75	
New Windsor	135	
Mt. Wilson	40	
Owings' Mills	120	
		3810
Fulton Station—		
York Road, Sinsheim, Glenville and Lineboro Creameries	1000	
Union Bridge	105	
Linwood	370	
New Windsor	445	
Pipe Creek	190	
Wakefield	375	
Medford	405	
Avondale	190	
Spring Mills	250	
Westminster	415	
Carrollton	345	
Patapsco	285	
Finksburg	235	
Glen Falls	95	
Glyndon	235	
Timber Grove	220	
Gwynnbrook	160	
Owings' Mills	265	
McDonogh	50	
Mt. Wilson	80	
Pikesville	50	
		5765
Camden Station—		
Monrovia	375	
Plane No. 4	210	
Mt. Airy	350	
Watersville	70	
Morgan's	40	
Hood's Mills	90	
Sykesville	210	
Henryton	100	
Frederick Junction	40	
Marriottsville	65	
Woodstock	130	
		1680

Stations.	Gallons.	
North Avenue Station (Md. & Pa. R. R.)—		
Cardiff	40	
Pylesville	250	
Highland	100	
The Rocks	430	
Fern Cliff	50	
Sharon	160	
Forest Hill	50	
Bynum	150	
Bel-Air	285	
Watervale	175	
Fallston	590	
Laurel Brook	75	
Baldwin	495	
Hyde	485	
Long Green	380	
Glenarm	65	
Notchcliff	85	
Summerfield	100	
Loch Raven	75	
Towson	175	
		4215
President Street Station—		
Perryman's	875	
Magnolia	235	
Edgewood	210	
		1320

Summary.	Gallons.
Calvert Station	7,550
Fulton Station	5,765
North Avenue Station	4,215
Hillen Station	3,810
Camden Station	1,680
President Street Station	1,320
	24,340

TABLE No. 5.

CITY WATER SUPPLY.

1893.	Volatile Solids.	Mineral Solids.	Total Solids	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrates.	Nitrites.	Required Oxygen.	Hardness.
January	38	26	64	3.20	0.032	0.064	0.55	0.001	1.02	52.82
	46	46	92	3.20	0.110	0.160	0.55	trace	0 95	45.85
	48	24	72	3.00	0.120	0.190	0.60	"	0.89	47.610
	30	34	64	3.50	0.096	0.228	0.60	0.002	0.67	42.24
February	26	44	70	3.50	0.060	0.120	0.24	0.000	1.05	45.18
	42	64	106	4.50	0.064	0.112	0.64	0.001	1.48	66.37
	26	44	70	3.30	0.112	0.256	0 62	0.002	0.75	44.95
	38	36	74	3.60	0.056	0.112	0.57	0 001	1.57	42.45
March	34	30	64	3.50	0.048	0.096	0.64	0.002	0.80	39.47
	38	34	74	3.10	0.038	0.081	0.66	0.001	0.91	46.24
	38	38	76	3.25	0.040	0.098	0.53	0.001	1.05	47.14
	40	49	89	3.50	0.045	0.100	0.43	0.001	0.96	50.00
April	46	31	77	3.45	0.045	0.095	0.38	0.001	1.08	48.10
	39	42	81	3 40	0.039	0.104	0.50	0.001	1.20	51.50
	35	35	70	3.85	0.041	0.111	0.62	0.002	1.00	48.20
	40	53	93	3 60	0.038	0.098	0 47	0.001	1.22	46.30
May	38	40	78	4.00	0.040	0.090	0.54	0.002	1.05	45.45
	31	51	82	3.65	0.038	0.050	0.37	trace	1.08	42.20
	29	63	92	3.50	0.037	0.090	0.46	"	1.14	44.15
	30	51	81	3.71	0.045	0.090	0.33	0.001	1.20	47.26
June	38	72	110	3.80	0.044	0.116	0.50	0·001	1.35	47.30
	40	58	98	3.65	0 050	0.109	0.63	0.002	1.42	46.15
	40	76	116	4.16	0.040	0.120	0.77	0.002	1 53	48.03
	40	60	100	3.92	0.040	0.123	0.66	0.001	1.44	47.00

TABLE No. 5.—Continued.

CITY WATER SUPPLY.

1893.	Volatile Solids.	Mineral Solids.	Total Solids	Chlorine	Free Ammonia.	Albuminoid Ammonia.	Nitrates.	Nitrites.	Required Oxygen.	Hardness.
July	35	57	92	3.55	0.050	0.138	0.70	0.002	1.49	47.14
	41	51	92	3.68	0.053	0.125	0.48	0.001	1.38	50.05
	45	49	94	3.28	0.050	0.122	0.59	0.001	1.40	46 46
	58	51	109	4.07	0.055	0.131	0.70	0.002	1.33	45.00
August	60	50	110	3.85	0.047	0.140	0.77	0.002	1.55	46.10
	50	50	100	4.00	0.050	0.138	0.84	0 002	1.19	46.40
	38	47	85	3.39	0.036	0.091	0.57	0.001	1 28	47.22
	42	78	120	4.10	0 045	0.140	0.83	0.002	1.44	45.00
September	42	36	78	3.95	0.040	0.160	0.36	0.001	2.14	36.00
	39	73	112	4.68	0.030	0.044	0.73	0.002	2 07	39.20
October	20	82	102	4.10	0.030	0.150	1.05	0.002	2.16	40.40
	41	57	98	4 62	0.040	0.140	0.95	0.003	2 32	41.10
November	18	46	64	4.00	0.020	0.160	0.31	0.003	1.90	49.39
	20	50	70	3.85	0.020	0 090	0.52	0.002	1.66	47 50
December	35	38	73	3.42	0.025	0.104	0.88	0.001	1.77	48.48
	51	41	92	3.35	0.022	0.108	0.53	0.001	1.90	48.95

TABLE No. 6.

PUMPS, WELLS, SPRINGS, ETC.

1903.	Volatile Solids.	Mineral Solids.	Total Solids.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrites.	Condition.
Pump, Deaconess Home, 2500 W. North avenue	171	127	298	20.16	0.02	0.06	0.003	Polluted.
Pump, 112 Montebello avenue	206	195	401	108.50	0.05	0.19	0.004	"
Spring, Free Summer Excursion Society, Chesterwood	150	324	474	213.0	0.06	0.09	0.002	"
Spring, Harlem avenue ext	60	14	74	4.95	0.00	0.00	0.000	Good.
Well, House of Refuge	70	70	140	10.16	0.03	0.28	0.006	Polluted.
Pump, Chesterwood	190	156	346	32.05	0.18	0.34	0.005	"
Pump, Grill's Dairy Farm	146	58	204	45.40	0.11	0.16	0.009	"
Pump, 226 Old York road	116	250	366	116.0	0 16	0.22	0.004	"
Well, T. W. Staum's place, Frederick road	104	59	163	17.0	0.25	0.30	0.006	"
Well, St. Joseph's House of Industry	89	80	169	65.5	0 09	0.31	0.002	"
Pump, 848 First avenue	141	193	334	13.5	0 18	0.29	0.005	"
Towson run	149	67	216	4.07	0.19	0.27	0.005	"
Well, 162 Old York road	110	91	201	60.5	0.05	0.21	0.010	"
New well, Chesterwood	30	30	60	20.06	0.04	0.02	0.000	Good.
Pump, Gilmor lane, near York road	90	72	162	20.16	0.08	0.22	0.006	Polluted.
Stream, near Green Spring avenue	30	28	58	9.10	0.03	0.06	0.000	Good.
Pump, 23 Bartlett avenue	160	94	254	67 50	0.19	0.26	0.016	Polluted.
Pump, Park Heights avenue	90	62	152	15.90	0.14	0.31	0.009	"
Pump, Pimlico road	50	306	356	17.00	0.04	0.05	0.002	"
Well No. 1, Curtis Bay	10	26	36	4.86	0.03	0.06	0.000	Good.
Well No. 2, Curtis Bay	00	46	46	4.05	0.00	0.00	0.000	Very good
Spring, Braddish avenue	41	38	79	14.00	0.00	0.26	0.001	Polluted.
Pump, 231 Hickory avenue	149	98	247	97.50	0.08	0.14	0.004	"

Report of the Division of Plumbing and Drainage.

JAMES BOSLEY, M.D.,
Commissioner of Health.

DEAR SIR: I have the honor to submit my report of the work of the Division of Plumbing and Drainage for the year ended December 31, 1903:

Number of permits for plumbing	1,305
" of permits to drain closets	774
" of inspections of plumbing	717
" of sanitary inspections	554
" of applications from City Engineer's office approved	720
" of notices to abate nuisances	156

Respectfully submitted,

JOSEPH C. MITCHELL,
Superintendent.

Report of Throat Inspector.

BALTIMORE, MD., January 1, 1904.

JAMES BOSLEY, M.D.,

Commissioner of Health of Baltimore City.

SIR: I herewith submit a report of the work done in that division of your department under my charge for the year ending December 31, 1903.

All cases of diphtheria occurring in Baltimore city are required by law to be reported to the Health Department. When such a case is reported the premises are immediately placarded "Diphtheria," which placard remains on the house until the patient or patients are declared convalescent by the attending physician, and the throat cultures taken from all the inmates of the infected house are declared by this department to be free from the presence of diphtheria bacilli. In case the patient dies, negative cultures must be secured from all the other inmates of the house before the premises are declared free from infection, the placard removed and the premises disinfected. All inmates of a house placarded "Diphtheria" are supposed to be under quarantine. The children cannot attend public or Sunday-schools, and adults are expected to mingle with the public only so much as is absolutely necessary for their livelihood.

These throat cultures from convalescent diphtheria patients for fumigation may be taken by the physician in charge of the case, or, upon request, this department will perform this duty.

Last year in all 874 cultures were taken by attending physicians as compared to 3,775 taken by me as Throat Inspector.

The following tables show the number of cultures taken each month and the results of same.

Table No. 1 shows the cultures taken by attending physicians.

Table No. 2 shows the cultures taken by this department.

TABLE No. 1.

CULTURES TAKEN BY PHYSICIANS.

	Positive.	Negative.	Total.
January	18	37	55
February	15	60	75
March	13	31	44
April	29	90	119
May	21	53	74
June	3	21	24
July	7	31	38
August	6	29	35
September	15	51	66
October	28	104	132
November	15	87	102
December	27	83	110
Total	197	677	874

TABLE No. 2.

CULTURES TAKEN BY THROAT INSPECTOR FOR 1903.

	Negative.	Positive.	Total.	Houses Visited.
January	194	3	197	82
February	195	17	212	84
March	166	19	185	64
April	216	2	218	87
May	212	6	218	90
June	112	5	117	50
July	246	17	263	63
August	289	10	299	85
September	433	44	477	83
October	553	19	572	162
November	493	8	501	153
December	492	24	516	149
Total	3601	174	3775	1152

TABLE No. 3.

COMBINED TABLE, SHOWING TOTAL NUMBER OF CULTURES TAKEN DURING 1903 FOR FUMIGATION.

	Negative.	Positive.	Total.
Taken by physicians	677	197	874
Taken by Throat Inspector	3601	174	3775
Total	4278	371	4649

The striking difference in the percentage of positive cultures taken by the attending physicians over those taken by this department is due to the fact that in a large majority of cases the attending physician takes a culture *only* from the throat of the patient, with the request that if that culture is found free from diphtheria bacilli, the department is requested to take the other cultures.

So in a large majority of the cases this department only takes cultures after the patient's throat is free from infection. Hence the much smaller per cent. of the positive cultures.

The following table shows the work of this year as compared to that of 1902:

	1902.	1903.
Number of cultures taken	1905	4649
" " positive	97	371
" " negative	1808	4278
" houses visited	782	1152
" positive cultures without showing clinical diphtheria	36	175

This shows about two and one-half times as many cultures taken in 1903 as in 1902, or the enormous net increase over last year of nearly 150 per cent.

It is a recognized fact that diphtheria is more prevale during the autumn and winter months, and my experience last year entirely bears this out, as the following chart wi show. The largest number of cultures were taken durin October, November and December, while the smallest num ber were taken during the summer months. The public schools opening in September is undoubtedly one of the main factors in bringing about this relation:

It is s
during t
last yea
show.
October,
ber were
schools
factors i

When negative cultures are secured from all the inmates of a house infected with diphtheria, the infected room or rooms are disinfected by means of formaldehyde gas, and in order to render this disinfection more secure, test cultures are placed in these rooms and returned to the Health Department by mail after fumigation.

If these test cultures show that all the germs have been destroyed, the disinfection is considered effective; if, however, these test cultures are found to contain germs, the fumigator repeats his work until a negative culture is obtained. I think the small percentage of houses reinfected, i. e., a second case occurring after fumigation, will show that the disinfections are, as a rule, effective.

As a comparison I have also included scarlet fever reinfections in the following table:

	Scarlet Fever.	Diptheria.
Number of disinfections for 1903	957	1168
Number of reinfections	18	34
Percentage of reinfections	1.8	2.9
Number of control cultures positive in reinfections	1	6
Number of control cultures negative in reinfections	14	23
Number of control cultures missing or empty in reinfections.	3	5

In these cases in the above table where the first control culture was positive (six in diphtheria and one in scarlet fever) we can possibly account for a reinfection. In five of the diphtheria cases of reinfection and in three of the scarlet fever cases where the control cultures were either not sent back to this department, or were sent back empty, again might account for the reinfection on the supposition that the cultures might have been positive had we been able to examine them. The remainder of the reinfections are more difficult to account for.

Of these twenty-six diphtheria reinfections, six occurred within one week after disinfection, nine within two weeks, five within one month, one within three months, and two within six months.

I think that the reinfections occurring three months after disinfections may possibly bear no relation to the primary case. This we cannot say positively, as Osler reports a case where virulent diphtheria bacilli were found on a child's play toys five months after an attack of diphtheria, and experimently live diphtheria bacilli have been kept on a piece of silk thread for one hundred and seventy-two days.

The cases of reinfection occurring anywhere under one month from time room was disinfected, certainly appear to be dependent on the original infection. We can readily see how this may happen even with the most thorough fumigation. Bits of membrane may be coughed up, deposited on nurses' clothing, and (unless she confine herself strictly in infected room) be accidentally wiped off on some furniture in another part of the house. Here we have another source of contagion.

Again: I have often seen a convalescing patient with a throat full of virulent bacilli, allowed the liberty of the house, where he may deposit live diphtheria bacilli from cellar to garret. As it is impossible to disinfect the entire house, we should not be surprised to see another case develop here within a short time. Neither can we compel the patient to stay in one room until we declare his throat free from infection; we can only quarantine the house as a whole.

So taking into consideration these unavoidable obstacles to an ideal disinfection, I think the small amount of 2.9 per cent. of reinfections in diphtheria and 1.8 per cent. reinfections in scarlet fever, are no more than we should reasonably expect, and will I am sure compare most favorably to the reinfections from these two diseases in other cities.

Of the scarlet fever reinfections we have a somewhat different picture, the time before reinfections being longer than in diphtheria. Of the fourteen scarlet fever reinfections show-

ing negative cultures, one occurred within one week, one within two weeks, seven within one month, four within three months, and one within six months. We see the length of time before infections to be greater here than in diphtheria, and this should not surprise us for several reasons: First, the period of incubation is as a rule longer in scarlet fever than in diphtheria. Second, we have the more important point of the period of infection. This we know is on the average about six weeks, yet where we have an otitis, rhinitis, suppurating glands, etc., complicating or succeeding the primary case, the infective period may be much more prolonged. Hence we find over seventy-eight of these reinfections occurring in from one to three months after the primary case. In fact there is just ground for the supposition that in the reinfection occurring in one week after fumigation, the patient was exposed to the same source of contagion as was the primary case.

Last September one of the children at the Fresh Air Lodge, situated near Belair, Md., was brought to Baltimore complaining of a sore throat. Upon examination it was discovered she was suffering with diphtheria. I immediately went to the Lodge (as per your request) and made cultures of all the inmates. Fifty-one cultures were taken in all, seven of which contained diphtheria bacilli. On the next day (September 4th) I returned to the Lodge and injected antitoxin. All the children who showed a positive culture received 2,000 units with one exception. One child who had developed a slight membrane received 3,000 units. All other inmates received 1,000 units each. All of these children were isolated, the Lodge put under quarantine and an antiseptic gargle prescribed. On September 9 I made a third trip. All the inmates were again examined. No membrane or other suspicious sign or symptoms were observed. The temperatures were all normal. The isolation of the children showing a positive culture were continued, and I found all other prophylactic measures being

rigidly observed. No further trouble was met with, and after securing negative cultures from all the throats the quarantine was lifted on September 14, and the children allowed to return to Baltimore.

I could only find one possible source of infection traceable which might have occurred at the camp. This was either through the milk supply or by direct contact with the milkman, who supplied the camp with milk. This man had been brought in contact with a case of diphtheria in Belair, and I secured a positive culture from his throat. Whether there was any connection between these two cases it is impossible to say, but the circumstances were, to say the least, very suspicious. I think these prompt measures not only prevented a spread of diphtheria at the camp, but in Baltimore, as would in all probability have been the case had these seven children with a positive culture been allowed to return to this city and roam at large.

In conclusion I think the above report shows—

(1) The enormous increase in the work of Throat Inspection.

(2) The immense importance of Throat Inspection.

(3) The importance of thorough disinfection.

(4) That our disinfections are as a rule effective as shown by the small per cent. of reinfections.

(5) That although the identity of the scarlet fever organisms has not been definitely settled (though Mallory has almost proven it to be a protozoon), it would seem to be even less resistant to formaldehyde than the diphtheria bacillus, as is shown by a smaller percentage of reinfections.

Respectfully submitted,

WILBUR P. STUBBS, M.D.,
Inspector of Throats.

Report of Inspectors of Food.

JAMES BOSLEY, M.D.,
Commissioner of Health.

DEAR SIR: We have the honor to report that during the year ended December 31, 1903, we made the following inspections of and condemnations of food:

MONTHS.	Stores Inspected.	Markets Inspected.	Slaughter-Houses Inspected.	Abattoirs Inspected	Fruits and Vegetables Condemned, Pounds.	Meats and Poultry Condemned, Pounds.
January	942	127	21	113	2,850	3,518
February	928	123	35	44	2,450	9,449
March	933	127	23	41	4,200	4,260
April	918	123	26	45	2,650	14,357
May	931	130	18	44	3,150	6,430
June	893	132	39	66	4,380	12,961
July	891	131	18	66	5,500	14,205
August	853	129	14	91	13,750	6,630
September	940	133	18	55	12,690	6,021
October	930	127	15	54	3,950	3,130
November	943	124	14	52	1,500	6,500
December	854	136	12	52	.....	8,895
Total	10,959	1,542	253	723	57,070	94,356

Respectfully submitted,

CHARLES KNELL.
GEORGE J. FISCHER,
E. C. COOPER,
Inspectors.

Report of the Nuisance Clerk.

BALTIMORE, December 31, 1903.

JAMES BOSLEY, M. D.,

Commissioner of Health.

DEAR SIR—Please find report of work done in this department for the year 1903:

MONTHS.	Permits to Clean Privies.	Number of Loads to Winans' Dump.
January	1,688	2,677
February	1,780	2,637
March	7,643	8,958
April	5,686	9,260
May	4,759	7,676
June	5,008	7,299
July	5,019	7,304
August	4,232	6,817
September	3,371	4,946
October	2,475	3,630
November	1,933	2,983
December	1,692	2,152
Total	45,286	67,339

There has been only one dump for the reception of night soil since March 1, 1902, at which time the Foley Wharf dump was closed.

Respectfully,

F. H. JENKINS,

Nuisance Clerk.

Report of the Inspector of Bakeries.

BALTIMORE, January 1, 1904.

JAMES BOSLEY, M.D.,
Commissioner of Health.

DEAR SIR: I have the honor to submit the following report of inspection of bakeries during the year ended December 31, 1903:

MONTHS.	Inspected	Ordered Cleaned.
January	281	7
February	238	.....
March	270	2
April	249	.....
May	233	2
June	242	17
July	274	12
August	250	7
September	260	.....
October	281	6
November	238	4
December	220	4
Total	3,036	61

Respectfully submitted,

R. L. WEBER,
Inspector of Bakeries.

Report of the Keeper of the Morgue.

BALTIMORE, January 1, 1904.

To the Commissioner of Health.

Report for the year 1903 of the City Morgue:

Number of bodies received		272
Males	208	
Females	62	
Whites	137	
Blacks	135	

Ages from 1 day to 1 month	5
1 month to 1 year	15
1 year to 10 years	6
11 " " 20 "	14
21 " " 30 "	44
31 " " 40 "	55
41 " " 50 "	48
51 " " 60 "	37
61 " " 70 "	25
71 " " 80 "	2

CAUSES OF DEATH.

Dysentery	1	Drowned	33
Septicæmia	2	Gunshot wound	5
Fractured skull	12	Heart disease	22
Asthenia	5	Hemorrhage	7
Congestion of lungs	4	Asphyxia	3
Burns	3	Pneumonia	7
Bright's disease	4	Typhoid fever	5
Senile decay	1	Peritonitis	8
Suicide	9	Exhaustion	4
Acute enteritis	1	Asthma	3
Heart trouble	2	Alcoholism	2
Nephritis	13	Acute gastritis	1
Heart failure	10	Scrofula	1
Rheumatism	1	Meningitis	3
Apoplexy	8	Heat prostration	2
Accident	24	Sepsis	1
Cardia failure	7	Cholera infantum	1
Exposure	1	Marasmus	3
Oval of heart	1	Convulsions	1
Tuberculosis	21	Electrocuted	1
Suffocation	3	Paralysis	2
Strangulation	1	Rupture	1
Inanition	4	Still-births	14

Bodies buried by friends	148
Bodies buried by city	122
Bodies now at the Morgue	3
Post-mortems held by Dr. N. G. Keirle	32

PATRICK R. GLYNN,
Superintendent.

Report of Commissioner's Clerk.

BALTIMORE, January 1, 1904.

JAMES BOSLEY, M.D.,
Commissioner of Health.

DEAR SIR: I have the honor to submit herewith an account of the work done by me during the year ended December 31, 1903.

Number of letters sent out	3,164
Number of notices sent to physicians	4,790
Number of notices sent to undertakers	189
Number of notices sent to hospitals	340
Number of notices sent to hotels	212
Number of notices sent to public schools	10,000
Number of notices sent to parochial schools	4,800
Number of notices sent to private schools	800
Number of notices sent to Sunday-schools	12,000
Number of notices sent to dispensaries	3,000
Number of notices sent to factories	1,200
Number of notices sent to banks and business houses	1,500
Number of monthly reports	5,400
	47,395
Number of culture tubes delivered to city stations	9,340

Respectfully submitted,

ELEAZER GOLDBERG,
Commissioner's Clerk.

Report of Inspector of Cow Stables.

BALTIMORE, January 1, 1904.

JAMES BOSLEY, M. D.,
Commissioner of Health.

DEAR SIR: I beg to submit my report of inspections of cow stables during the year ended December 31, 1903. At the beginning of the year there were 287 stables used for housing cows for dairy purposes and for private use in the city. During the year twenty-three dairymen disposed of their cows and retired from the business, leaving 264 stables at the close of the year. There are twelve dealers in milch cows in the city. I am pleased to report that there seems to be a general disposition on the part of dairymen to comply with the regulations of the department, but I was compelled to cause the arrest of two men for their refusal to comply with the law, both of whom were fined. Eight cows were condemned and removed from the city. During the year I collected thirty samples of milk and eight samples of water used for stock for analysis.

The following tables show in detail the inspections by months:

MONTHS.	Stables. Inspected.	Stables Ordered Cleaned.	Number of Cows Inspected.
January	365	4	1,596
February	380	1	1,608
March	304	2	1,552
April	294	1	1,471
May	264	2	1,392
June	284	2	1,480
July	291	1	1,537
August	294	3	1,596
September	283	2	1,582
October	267	3	1,490
November	203	2	1,030
December	264	1	1,142
Total	3,493	24	17,476

Respectfully submitted,
GEORGE F. SCHULTZ,
Inspector.

Report of the Index Clerk.

Report of the Division of Fumigation and the Division Having Charge of the Burial of the Pauper Dead.

BALTIMORE, January 1, 1904.

JAMES BOSLEY, M.D.,
Commissioner of Health.

DEAR SIR: I herewith most respectfully submit a report of the division in my charge, including a table of fumigations and their results, together with a detailed report of the pauper dead and the disposition of the same. There is a complete record in this division covering all possible ascertainable facts in each and every case. The tables show where the bodies came from and the disposition of the same.

FUMIGATIONS CLASSIFIED BY DISEASES—YEARS COMPARED.

	1902.	1903.
Bright's Disease	1	1
Bronchitis	.....	1
Cancer	5	9
Chicken-pox	3	.....
Diphtheria	816	1,182
Erysipelas	2	11
Gangrene	1	.....
Lupus	.....	1
Lockjaw	1	1
La Grippe	.....	2
Measles	12	18
Pneumonia	2	1
Scarlet fever	422	980
Small-pox	14	30
Septicæmia	2	3
Septic Infection	.....	2
Tuberculosis	76	137
Typhoid Fever	15	15
Tonsilitis	.....	1
Unknown	5	6
Whooping Cough	1	.....
Total	1,378	2,401

RESULTS OF FUMIGATION—YEARS COMPARED.

	1902.	1903.
Negative	1,018	1,733
Positive	224	366
Unreturned tubes	132	238
Returned empty	4	64
Total	1,378	2,401

Statement of dead bodies turned over to the Anatomical Board by the Commissioner of Health, under Act of the General Assembly of Maryland, Chapter 163, 1882, to be used only to promote medical science in the State of Maryland and the medical schools of Baltimore City, January 1, to December 31, 1903, inclusive.

	1902.	1903.
Adults	301	249
Between 1 and 5 years	22	13
Under 1 year.	249	240
Still births	172	218
Total	744	720
Males,	454	437
Females..	283	261
Unknown sex	7	22
Total	744	720
Whites	229	229
Blacks	510	476
Unknown	5	15
Total	744	720

The bodies were received from the following hospitals and institutions:

	1902.	1903.
Bayview	97	99
Baltimore City Hospital	33	28
Baltimore City Jail	3	.....
Canton Police Station	1	.....
Central Police Station	.....	3
Ellicott City	2	.....
Garrett Hospital	3	1
Good Samaritan	.....	5
Homœpathic Hospital	8	8
Home of Mothers and Infants	2	.....
Hebrew Hospital	1	.....
Johns Hopkins Hospital	54	36
Franklin Square Hospital	1	.....
622 W. Lombard Street	.....	39
115 W. Lombard Street	11	16
817 Linden Avenue	.....	22
Maryland General Hospital	41	16
Marine Hospital	.....	1
Mt. Wilson, Md	4	4
Miscellaneous (private houses)	268	250
Nursery and Child's Hospital	30	35
Morgue	12	44
Northeastern Police Station	2	2
Northwestern Police Station	7	9
Northern Police Station	3	1
Penitentiary	13	3
Provident Hospital	1	.....
Southern Police Station	5	3
Southwestern Police Station	1	2
St. Agnes' Hospital	6	3
St. Elizabeth's Home	87	60
St. Joseph's Hospital	14	12
Little Sisters of the Poor	.....	1
University Hospital	20	15
Union Protestant Infirmary	1	.....
Western Police Station	2	2
West End Maternite Hospital	1	.....
Total	744	720

Disposition.	1902.	1903.
Baltimore Medical College	52	146
Baltimore University College	14	.....
College Physicians and Surgeons	316	271
Homœpathic College	3	5
Hebrew College	1	.....
Johns Hopkins Medical College	286	186
Maryland Medical College	19	9
1113 Madison avenue	1	.....
University of Maryland	50	99
University School of Medicine	.....	1
Woman's College	2	3
Total	744	720

Total Number of Dead Bodies Handled by Health Department.

	1902.	1903.
Buried in Potter's field	21	12
Surrendered to friends for burial	180	169
Transferred to anatomy board	728	709
Total	929	890

Respectfully submitted,

GEO. C. WEDDERBURN,
Index Clerk.

Report of the Registrar's Clerk and Index Clerk.

BALTIMORE, MD., January 1, 1904.

JAMES BOSLEY, M.D.,
Commissioner of Health:

We have the honor to submit the report of the work done by the Registrar's Clerk and Index Clerk during the year ended December 31, 1903:

Deaths recorded, 28,916.
Deaths indexed, 10,141.
Births indexed, 7,000.
Transcripts issued, 452.
Amount paid to the City Comptroller, $226.

The record of deaths are recorded and indexed to date.

The record of births are only indexed up to and part of the year 1883; therefore, the indexing is back for the past twenty years and the recording for the past four years.

Yours respectfully,

JOHN H. UHLENBERG,
Registrar's Clerk.

C. A. WALL, JR.,
Index Clerk.

Report of the Burial Permit Clerk.

BALTIMORE, January 1, 1904.

JAMES BOSLEY, M.D.,

Commissioner of Health.

DEAR SIR: I hereby respectfully submit the report of the work done by the Burial Permit Clerk for the year ended December 31, 1903.

The following table exhibits a summary of the various kinds of permits issued during the year:

MONTHS.	Burial Permits, City.	Burial Permits, Transit.	Burial Permits, Still Births.	Burial Permits, Shipping.	Burial Permits, Disinter.	Removal Permits.	Total.
January	1,030	89	61	99	14	275	1,568
February	862	68	58	93	14	230	1,325
March	902	79	60	96	18	241	1,396
April	805	61	50	96	65	219	1,296
May	753	84	68	80	58	216	1,259
June	707	81	70	80	33	211	1,182
July	1,097	83	68	104	15	288	1,655
August	860	79	65	100	26	218	1,348
September	707	69	63	90	25	193	1,147
October	776	73	57	105	32	208	1,251
November	756	77	61	91	32	199	1,216
December	886	99	74	114	45	253	1,471
Total	10,141	942	755	1,148	377	2,751	16,114

During the year there were received from cemeteries and transportation companies 13,363 burial, disinter and shipping permits, which have been affixed to the certificates of death and applications for burial, and the same have been filed for record.

Respectfully submitted,

HARRY C. ANDREWS,

Burial Permit Clerk.